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# NAVAL POSTGRADUATE SCHOOL
## Monterey, California

# THESIS

A SYSTEM ANALYSIS AND DESIGN PROPOSAL
FOR THE COMPTROLLER OF THE UNITED STATES
NAVAL POSTGRADUATE SCHOOL

by

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and
Andrew Marafino, Jr.

March 1987

Thesis Advisor Norman R. Lyons

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A major problem experienced by the Naval Postgraduate School Comptroller concerns the methods presently used in the labor distribution budget process. These methods are primarily manual and very labor intensive. Developing and implementing an information management system for the comptroller will significantly reduce labor requirements and enhance the timeliness and accuracy of the information required to perform the budget process. A proposal for the analysis, design and implementation of such a system is the primary focus of this thesis.

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for the Comptroller of the United States
Naval Postgraduate School

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March 1987

## ABSTRACT

A major problem experienced by the Naval Postgraduate School Comptroller concerns the methods presently used in the labor distribution budget process. These methods are primarily manual and very labor intensive. Developing and implementing an information management system for the comptroller will significantly reduce labor requirements and enhance the timeliness and accuracy of the information required to perform the budget process. A proposal for the analysis, design and implementation of such a system is the primary focus of this thesis.

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The reader is cautioned that computer programs developed in this research may not have been exercised for all cases of interest. While every effort has been made, within the time available, to ensure that the programs are free of computational and logic errors, they cannot be considered validated. Any application of these programs without additional verification is at the risk of the user.

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# I. INTRODUCTION

As an introduction, this chapter opens with a discussion of the background and purpose of the thesis. The basic research questions to be answered are outlined along with the general methodology to be followed. The chapter concludes with a survey of several definitions and abbreviations that are used throughout the thesis and require clarification.

## A. BACKGROUND

The Naval Postgraduate School Comptroller presently has direct responsibility for managing the labor distribution budget process. Briefly, the management of this budget process consists of allocating and controlling funds used to pay civilian employee salaries.

Recent directives from the Comptroller of the Navy mandate that at the start of the next fiscal year the direct responsibility for managing the labor distribution budget process shift from the Naval Postgraduate School Comptroller to a lower echelon of management.

This new policy necessitates several changes in the current labor distribution budget process. Although direct responsibility for managing labor funds is to be shifted to lower level managers, the Naval Postgraduate School Comptroller shall maintain the duty of monitoring the use of these funds. The manual system presently being used to allocate and control labor funds must be altered to accommodate the Comptroller of the Navy's new policy, and it must also be automated in a way that serves the local comptroller's monitoring needs.

The focus of this thesis is to address the major problems being experienced by the Naval Postgraduate School Comptroller relative to altering and automating the labor distribution budget process.

Developing and implementing an information management system for the comptroller should significantly reduce the labor requirements associated with the present manual system and should simultaneously provide the comptroller with a means to monitor the management of labor funds by lower level managers.

## B. PURPOSE

The purpose of this thesis is to analyze, design and implement an information management system that efficiently manages the data requirements for the comptroller's labor distribution budget process at the Naval Postgraduate School. Special attention is to be directed toward the comptroller's budget monitoring needs that are a result of recent policy changes mandated by the Comptroller of the Navy.

An automated system that parallels the currently used manual system shall be implemented with the goal of reducing labor requirements and enhancing timeliness and accuracy of the budget information required by the comptroller for decision making.

## C. RESEARCH QUESTIONS

Listed below are the major research questions to be answered in this thesis.

- What is the comptroller's overall mission?
- What are the comptroller's problems relative to accomplishing the mission, and how is the labor distribution budget process involved?
- What are the comptroller's information requirements for accomplishing the labor distribution budget process?
- What are the alternatives available to satisfy the comptroller's information requirements, and which alternatives are most feasible?
- What comprises the comptroller's current system, and what is a suitable design proposal for a new system?
- How is the new system to be developed and implemented?

## D. METHODOLOGY

The research required to develop a suitable design proposal for a new system that better serves the comptroller's needs revolves around determining the system's requirements, evaluating alternatives, designing a system, and developing an implementation plan.

Determining requirements entails research to define the specific problems that impede the comptroller's mission and what can feasibly be done to address these problems.

Evaluating alternatives entails identifying the hardware, programs, data, procedures, and personnel available to facilitate the comptroller's mission. A cost/benefit analysis and subjective evaluation are also applicable research areas for evaluating alternatives.

Designing a system to serve the comptroller's needs should consider hardware (specifications), programs (specifications or design), data (file, screen and report formats), procedures (user and operator), and personnel (job descriptions, organization structure and training). Analysis of the comptroller's current system is also important for providing insight that may facilitate the design of a new system.

Finally, the thesis shall culminate with the development of a systems implementation plan that entails hardware and software installation, file construction, procedure documentation, and personnel training. A test period and installation method (parallel, direct conversion, pilot, phase-in) shall also be proposed.

## E. DEFINITIONS AND ABBREVIATIONS

Several definitions and abbreviations require clarification. An AG (Activity Group) is an entity that performs a particular function. There are three AGs referred to and they perform the following functions:

- Support Function
- Public Works Function
- Education Function

Additionally, there are several SAGs (Sub-Activity Groups) which, as implied, are a sub-category of an AG. Each SAG is headed by a manager that at the start of the next fiscal year shall assume (from the Naval Postgraduate School Comptroller) the responsibility of managing labor funds.

The LMC (Local Management Code) further identifies individual offices or other lower echelons of management beneath the SAG. These are locally assigned codes and are used to identify separate key functions within a particular SAG. The LMC shall be the lowest echelon discussed within the scope of this thesis. A listing of AG, SAG and LMC codes is contained in Appendix A.

## F. SUMMARY

Automating the labor distribution budget process should facilitate the Naval Postgraduate School Comptroller's mission by reducing many labor intensive tasks and freeing more time for management functions. In light of the policy changes mandated by the Comptroller of the Navy, an automated information management system is an absolute necessity for controlling the funds allocated to dozens of managers affected by the new budget process. Due to the large number of employees concerned and the correspondingly large amount of payroll dollars involved, a careful analysis of the

requirements, design, and implementation of the new system is paramount. The final product must be a system that is practical and functional.

# II. MISSION ANALYSIS AND PROJECT INITIATION

The intent of this chapter is to identify the Naval Postgraduate School's mission and several specific problems associated with trying to accomplish that mission. The focal point of discussion concerns the Naval Postgraduate School Comptroller's capabilities and constraints relative to meeting the institution's overall mission.

## A. MISSION AREA IDENTIFICATION

As stated in the academic year 1986 Naval Postgraduate School Catalog, the mission of the institution is "to conduct and direct the advanced education of commissioned officers, and to provide such other technical and professional instruction as may be prescribed to meet the needs of the naval service; and in support of the foregoing, to foster and encourage a program of research in order to sustain academic excellence."

To accomplish this mission, the Naval Postgraduate School is headed by the Superintendent, who is a flag officer of the United States Navy. Reporting to the Superintendent are the Director of Programs and the Director of Military Operations who, in conjunction with one another, comprise a dual organization.

As further explained in the catalog, the administration of academic programs is accomplished through curricula offices and academic departments. The former are staffed by both naval officers (20%) and civilian faculty members (80%). Their primary functions include:

- Academic counseling
- Curriculum development and management
- Liaison with curricula sponsors

As far as financial management is concerned, the Naval Postgraduate School Comptroller plays an integral role in the overall mission of the institution. This department controls all revenues and expenses for the Superintendent. The proper management of tens of millions of dollars each year falls under the purview of the Naval Postgraduate School Comptroller.

A need exists to improve office productivity and enhance morale so that an ever increasing workload can more effectively be managed by the comptroller. Office automation is a primary target for improvement and can significantly contribute to the overall mission of the school.

## B. PROBLEM STATEMENT

This section gives an overall perspective of current problems, and what must be accomplished to address these problems.

### 1. Scope of the Problem

The growing complexity of planning, programming and budgeting has caused major changes in the way the Naval Postgraduate School Comptroller must manage civilian labor funds. These major changes include a proliferation of formal and informal requirements necessary for managing labor funds. As a result of these additional requirements, critical decisions are often delayed because of the excessive time spent gathering, collating, analyzing and documenting labor funds information. This problem coupled with an overworked clerical staff forces many officers and executives to waste significant amounts of time on routine, redundant, administrative tasks.

A means to increase productivity and preserve or boost the clerical staff's morale is essential for the successful accomplishment of the comptroller's mission. Increased productivity may also free officers and executives from performing routine tasks and allow them to utilize their time more effectively.

The scope for solving these problems should entail no more than nine man-months provided no major problems are encountered.

### 2. Job to be Accomplished

Tedious manual methods, voluminous manual files, and continuous management delays characterize the typical environment within the Comptroller's Office. A comprehensive study has been conducted, with the approval of the Naval Postgraduate School Comptroller, to document and understand the problems associated with the current system and make recommendations to:

- Increase productivity through the use of computer technology
- Reduce costs and administrative overhead through more efficient use of personnel
- Increase the flexibility of middle management to organize, classify, recruit and compensate civilian personnel
- Identify manual procedures with high volume, frequent repetition and short deadlines which cause them to be prime candidates for automation
- Create, store, manipulate and retrieve text, data and graphics files for scheduled and ad-hoc requirements

## C. EXISTING AND PROGRAMMED CAPABILITIES

Current capabilities are discussed in this section along with the possible impact that taking no action may have.

### 1. Current Capabilities

The comptroller's employees are hampered by the manual resources available for performing such activities like the labor distribution budget process. The manual resources currently in use for gathering labor budget information, communicating decisions and documenting activities include electric typewriters, filing cabinets, photo copiers, calculators and telephones. The vast majority of reports and documents are manually prepared and informally maintained. Although microcomputers are available, they are not being utilized.

### 2. Impact if no Action

The result of continuing with a "business as usual" approach to performing activities like the labor distribution budget process may limit the potential for greater creativity and innovation by individual managers. Continuing to utilize the present manual methods will not improve productivity, expand capabilities, or provide better management support. Report backlogs shall continue to plague the comptroller and have a negative impact on mission accomplishment.

## D. CONSTRAINTS

The proposed system must support existing Naval Postgraduate School organization and be capable of supporting any reorganizations during its life cycle. No increase in manning levels or in data processing personnel can be supported. Only available equipment may be utilized. Additionally, equipment must be operated by office personnel within the existing office environment. The proposed system must not cause any modifications to the existing interface with the Authorized Accounting Activity in Oakland, California. Finally, implementation must be initiated during the first quarter of fiscal year 1987 (October - December 1986).

# III. CONCEPT DEVELOPMENT

The purpose of this chapter is threefold. First, requirements are established which address the problems mentioned in Chapter II. Secondly, the feasibility of alternative methods to meet the user's requirements are evaluated. Finally, life cycle cost considerations are discussed.

## A. REQUIREMENTS DETERMINATION

An overview of the current system is presented in this section along with a proposal for what a new system should accomplish.

### 1. Current System Overview

A description of the current system shall, for the most part, remain within the confines of the responsibilities related to Naval Postgraduate School Comptroller; however, certain aspects of systems that extend beyond this realm must also be discussed in order to understand the system requirements to be established. The description of systems that are not within the purview of the Naval Postgraduate School Comptroller shall be limited to the detail required to understand the labor distribution budget process for which the requirements are being developed.

The labor distribution budget process aids in planning, programming and budgeting funds required for labor accounting and civilian compensation. All data destined for input to the labor distribution budget process is initially reported at the SAG (Sub-Activity Group) or LMC (Local Management Code) level. Labor accounting data is reported via a labor card on which the distribution of each civilian employee's labor is assigned to various functions performed. Civilian compensation data for each employee is reported via a time card that documents total clock time for which compensation is due.

This data is compiled by the Labor Budget Office (organized under the Naval Postgraduate School Comptroller) and forwarded to the Authorized Accounting Activity in Oakland, California. The Authorized Accounting Activity inputs the data into the naval civilian labor payroll process, which produces paychecks for civilian employees and which also produces labor distribution budget management data for the Naval Postgraduate School Comptroller.

The Naval Postgraduate School Comptroller is responsible for performing the labor distribution budget process (i.e., the distribution and expenditure of civilian labor funds). The current manual monitoring and execution of this process is performed by the Labor Budget Office and is very labor intensive.

### 2. Proposed System Overview

Recent policy changes promulgated by the Comptroller of the Navy direct that the execution of civilian labor distribution and compensation be performed at the SAG LMC level. The management of civilian labor distribution and compensation shall remain the responsibility of the local commander (Naval Postgraduate School Comptroller). In order to assist in the accurate and timely execution of the Comptroller of the Navy's recent policy changes, a system must be designed to reduce the current labor intensity associated with monitoring the labor distribution budget process. The proposed system shall only apply to operations at or below the Naval Postgraduate School Comptroller level. The system must not only provide an automated solution to the Naval Postgraduate School Labor Budget Office's tedious manual processes, but must also provide a compatible interface with the current naval civilian payroll process performed by the Authorized Accounting Activity.

## B. FEASIBILITY STUDY

This section presents two alternatives and the factors taken into consideration when choosing between these alternatives. Technical, operational and economical feasibilities are also considered.

### 1. Alternatives

Two alternatives are presented below to be conceptually developed and analyzed as possible solutions to the problems mentioned in Chapter II.

The first alternative is to maintain a "status quo" mode of operations. This alternative, hereafter referred to as the current system, is described in detail in Chapter IV. It is assumed that the labor intensity of this alternative will become increasingly burdensome during the execution of recent policy changes.

The second alternative is to provide an automated tool to relieve those labor intensive manual methods currently associated with performing the labor distribution budget process. This alternative, hereafter referred to as the new system, is also described in detail in Chapter IV. The new system is to provide an information management tool intended to increase productivity and facilitate the execution of recent policy changes.

2. **Considerations**

Under the current system and policies, timely and accurate management reporting are difficult to achieve. With additional management reporting requirements mandated by recent policy directives, further degradations in timeliness and accuracy (relative to monitoring the labor distribution budget process) are inevitable. The paramount consideration, therefore, is to select a valid alternative that ensures accuracy and timeliness in managing the budget process; this implies adopting the second alternative.

3. **Feasible Solution**

Feasibility of an appropriate alternative should consider technical, operational and economic aspects. The new system (i.e., second alternative) proved to be the most feasible in all three aspects. Technically, the new system can be implemented using currently available equipment. Its application is suitable for the use of a microcomputer system with typical "off-the-shelf" software. Operationally, the new system can interface easily into both the "local" environment (Naval Postgraduate School) and the "global" environment (Authorized Accounting Acivity). The new system also meets the user requirements under existing guidelines and constraints. Econonically, the new system can improve productivity by reducing the time and resources required to monitor the labor distribution budget process. Increased costs are minimal as far as additional resources are concerned. This is the obvious alternative to pursue.

## C. LIFE CYCLE COST CONSIDERATIONS

An initial evaluation of the new system's affordability eliminates the need for a lengthy econonic or cost/benefit analysis. The currently available microcomputer equipment, software and personnel within the Labor Budget Office are not only sufficient for implementing the selected alternative but also very cost effective. The constraint imposed by using currently available resources does not significantly effect selection of the new system. Through the new system's potential for responsiveness, accuracy, speed, and labor reduction, cost savings are expected to accrue while employee productivity and morale are expected to rise. As a result of these benefits, the long term mission effectiveness of the Naval Postgraduate School Comptroller should also be enhanced.

# IV. DEFINITION AND DESIGN

This chapter is intended to address several areas. First, the goals and objectives of the new system are derived. Next, a detailed analysis of the current system is conducted to include data flow analysis and structure analysis. Design constraints and a description of the new system are then presented. Finally, the man-machine interface is covered followed by a discussion of support plans.

## A. GOALS

The goals of the new system are threefold. Primarily, the system must be designed and implemented to allow for the accurate and efficient execution of recent policy directives relative to executing the labor distribution budget process. Secondly, the new system is to provide the Naval Postgraduate School Comptroller with the information required to manage the overall utilization of labor funds. Thirdly, the system is also to provide each SAG LMC manager with information to manage the specific utilization of labor funds at his/her echelon.

## B. COMPTROLLER OBJECTIVES

The objectives to obtain these goals revolve around providing pertinent information to different echelons of management. The objectives required to satisfy the Naval Postgraduate School Comptroller's needs include providing him/her with the information outlined below.

1. **Projected Labor Dollar Obligations**

This is to be provided on an "ad-hoc" basis for any selected management level (ranging from the lowest level management code to a combined command level). Obligation figures must include:

- Personnel Recruits (Projected Additional Obligations)
- Personnel Separations (Projected Reduction in Obligations)
- Other Personnel Actions (Projected Adjustments in Obligations)

2. **Cumulative Actual Budget Status**

This is to be provided at the same frequency as above but shall also include quarterly figures for:

- Actual Labor Obligations
- Actual Labor Allowances

- Quarterly Status of Labor Budget to include:
  - Budgeted Labor Dollars
  - To Date Labor Dollar Obligation
  - Total Labor Dollar Projection
  - Balance between Budgeted Labor Dollar Amount and To Date/Projected Labor Dollar Obligation

## C. SAG/LMC OBJECTIVES

The objectives required to satisfy the SAG/LMC manager's needs include providing him/her with the information outlined below.

1. **Labor Budget Status**

This is to be provided for review/planning of labor budget execution. Information must include:

- Office Code
- Local Management Code (LMC)
- Sub-Activity Group (SAG)
- Department
- Actual Labor Dollar Authorizations
- Actual Labor Dollar Obligations
- Projected Labor Dollar Obligations
- Balance between Labor Dollar Authorizations and Actual/Projected Labor Dollar Obligations

2. **Personnel End-Strength Figures**

These are to be provided to compare number of personnel authorized and actual number of personnel on the payroll (On-Board Strength).

## D. REPORTS

The above information objectives can be accomplished by two separate but related reports--one specifically for the Naval Postgraduate School Comptroller and the other tailored for each SAG/LMC manager. These reports are named the Labor OPTAR Report and the Labor Budget Status Report, respectively.

## E. CURRENT SYSTEM

This section analyzes the data flow of the current system. Both the physical and logical aspects of the system are considered.

1. **Data Flow Diagrams**

Currently, the performance of the labor distribution budget process involves information flowing among four entities. These entities include the Naval Postgraduate School Comptroller, the Labor Budget Office (under the Naval Postgraduate School Comptroller), the Naval Postgraduate School SAG LMC and the Authorized Accounting Activity in Oakland, California (to which the Naval Postgraduate School Comptroller reports functionally). The data flow diagrams contained in Figures 4.1 through 4.8 shall be used as a graphic tool for illustrating the partitioning and interrelationships of these entities into a network of activities and their interfaces.

2. **Current Physical System**

The current physical system, as depicted in Figures 4.1 and 4.2, provides the user's perspective of the current system. This is presented for analysis benefit only and is not intended to serve as a tool towards system design.

3. **Current Logical System**

The current logical system, shown in Figures 4.3 through 4.5, provides a more thorough technical analysis of the system and shall be utilized for the system design phase. An understanding of the current logical system provides the foundation necessary for designing the proposed system.

*a. Overall System*

Beginning with Figure 4.3, performing the labor distribution budget process requires several inputs. The Authorized Accounting Activity must provide transaction data, actual labor dollar expenditures/obligations, and blank time/labor cards. The Naval Postgraduate School SAG LMC provide their individual distribution of labor hours, and total hours worked per employee. Adjustments to base pay amounts and to employee base pay amounts are provided by the Labor Budget Office. The Naval Postgraduate School Comptroller provides a budgeted amount for labor and can also provide a query on the labor budget. The outputs that result from the labor distribution budget process include completed time and labor cards (which go to the Authorized Accounting Activity) and Labor Optar Report (which goes to the Naval Postgraduate School Comptroller).

*b. First Level Decomposition*

Figure 4.4 depicts the internal workings that comprise the labor distribution budget process. The three major processes include compile time and labor cards (1.0), fill in time and labor cards (2.0), and monitor labor budget status (3.0).

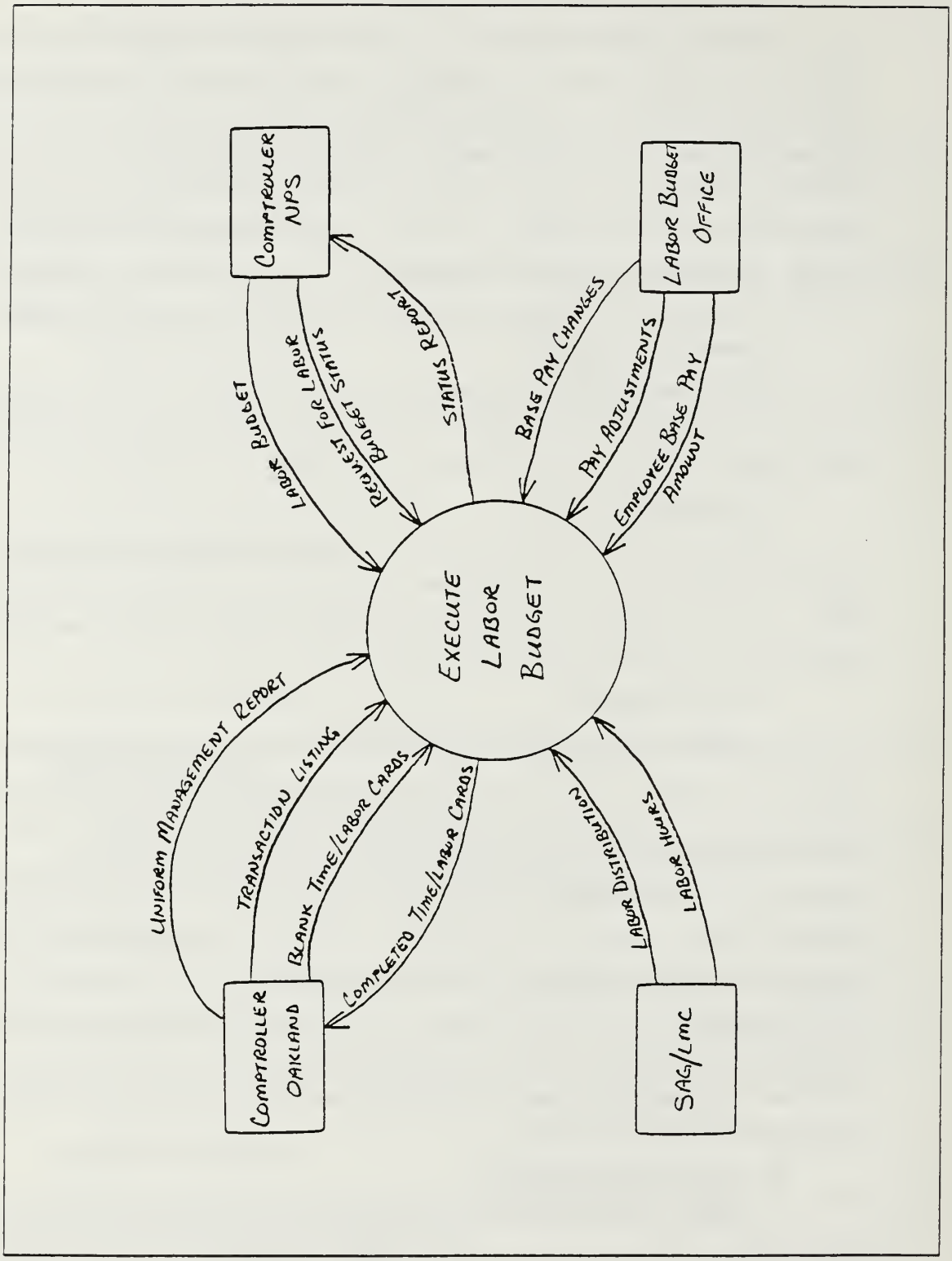



Figure 4.1 Current Physical System (Overall)

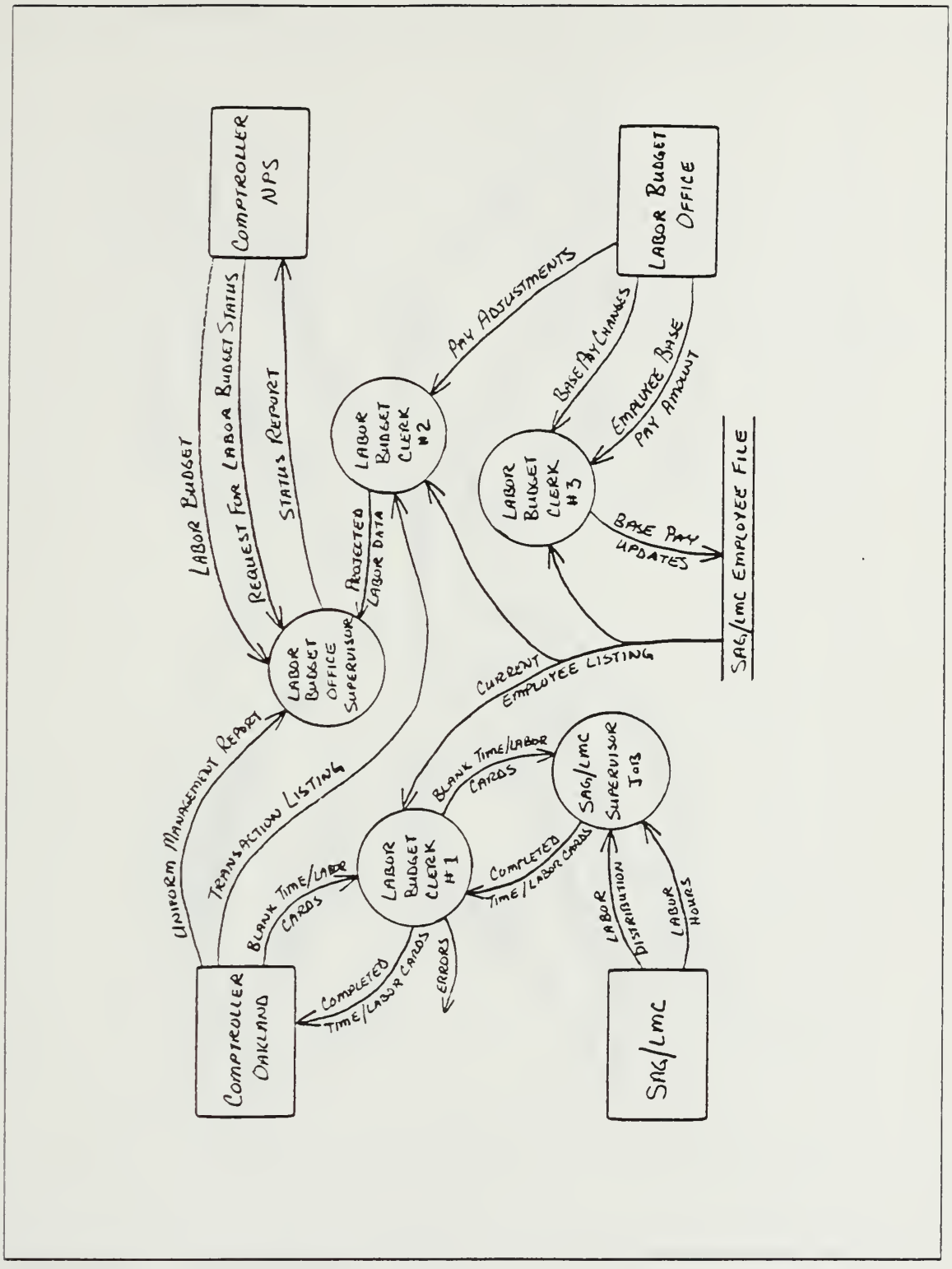



Figure 4.2 Current Physical System (First Decomposition)

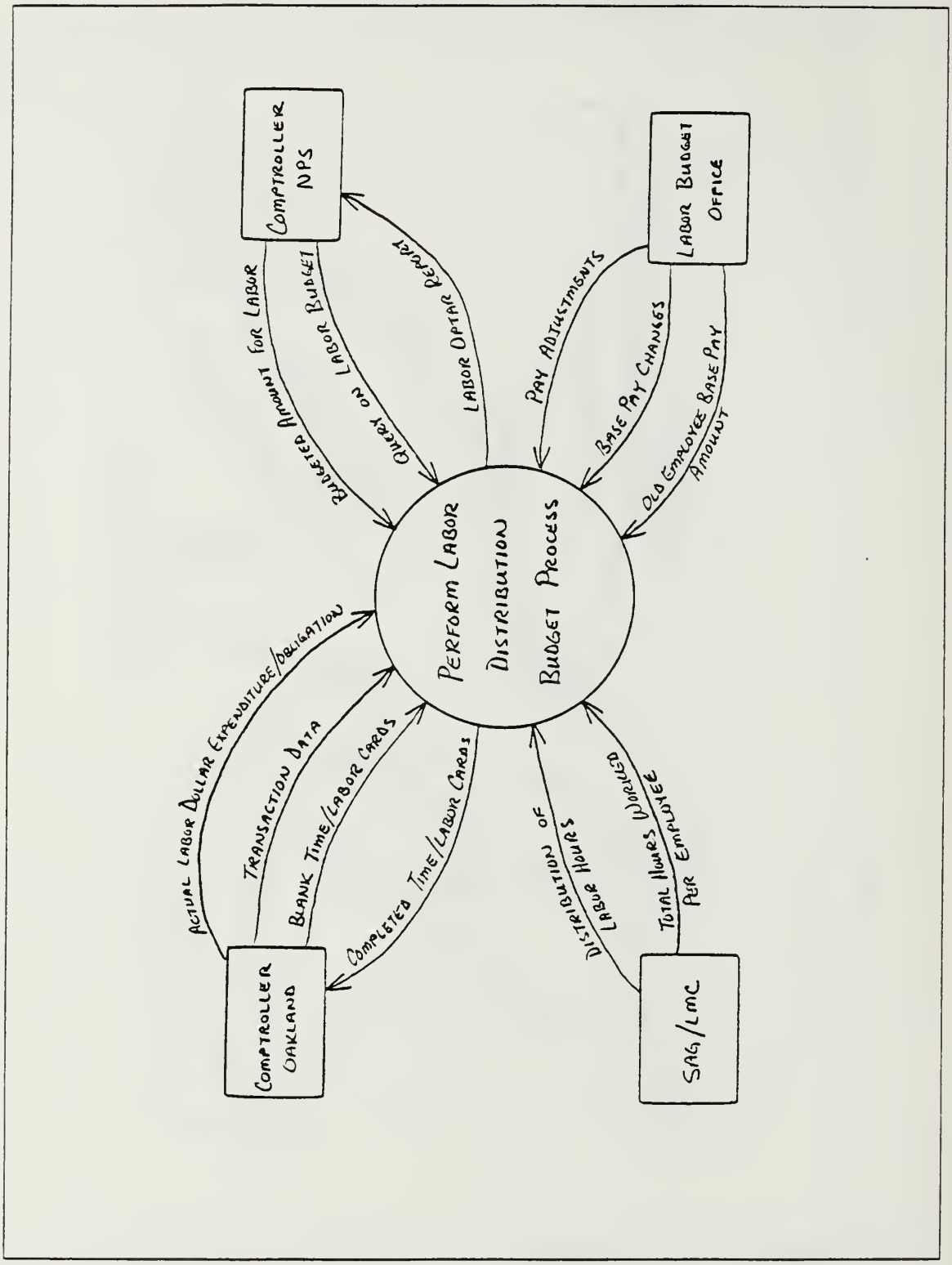



Figure 4.3 Current Logical System (Overall)

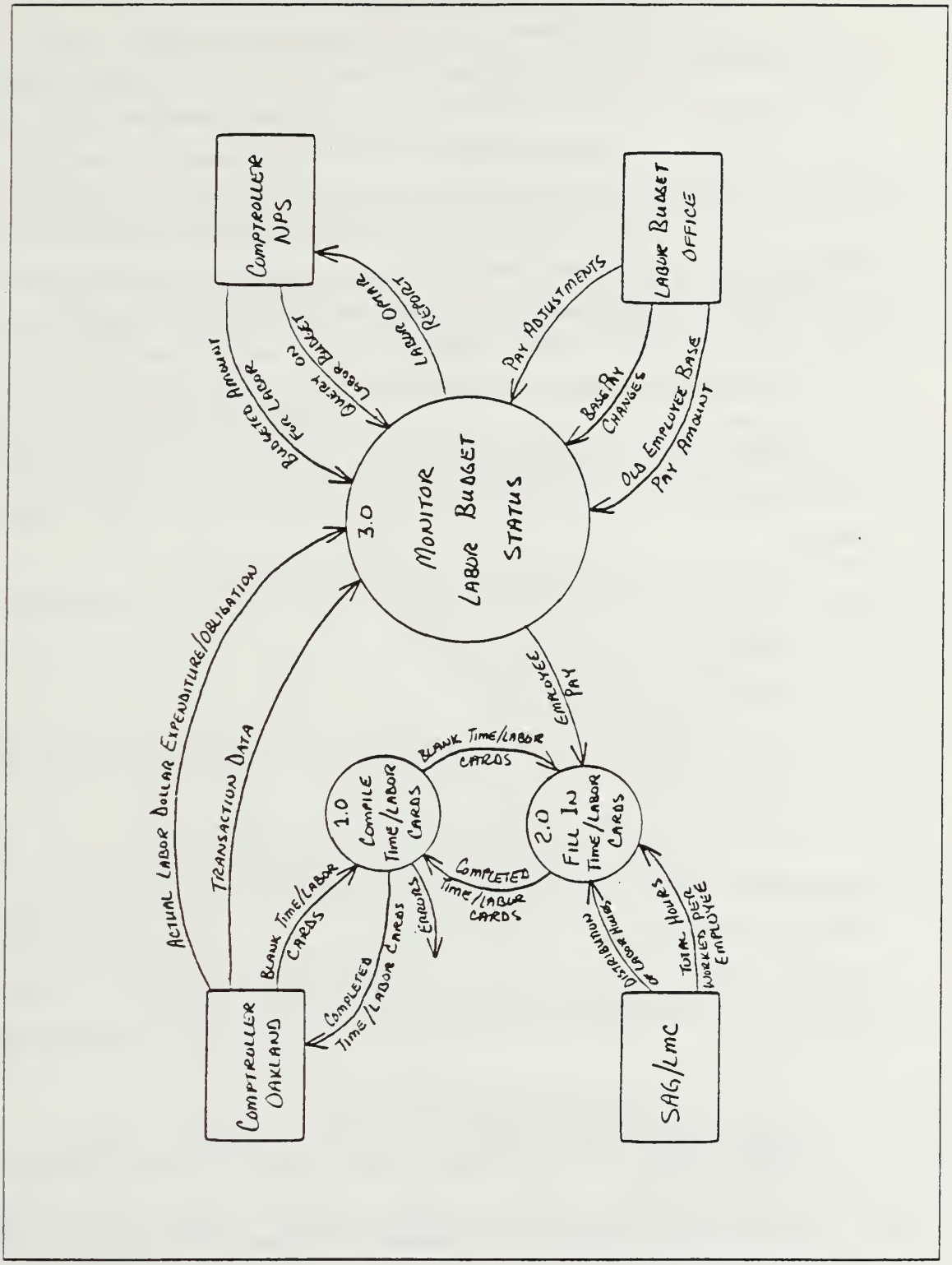



Figure 4.4 Current Logical System (First Decomposition)

(1) *Compile Time and Labor Cards Process (1.0).*

The first process, compile time and labor cards, has two data inputs. They are blank time/ labor cards, and completed time/ labor cards. The process has three outputs that include completed time/ labor cards, blank time/ labor cards, and error corrections. The blank time/ labor cards are received by the Labor Budget Office from the Authorized Accounting Activity. At this point they are manually compiled down to the SAG/LMC level ensuring that there are time and labor cards for each employee physically working at each level. Additions or deletions are rectified and sent as output to the SAG/LMC. When the completed time and labor cards are received as input, they are again manually compiled prior to sending them as output to the Authorized Accounting Activity. This desk check ensures that there are time and labor cards for each employee, and that the cards are correctly completed and authenticated by appropriate SAG/LMC supervisors. Any errors detected are rectified by the Labor Budget Office via contact with the appropriate SAG/LMC. Typical errors found include:

- Labor hours distributed do not match total hours worked per employee
- Use of invalid labor or payroll codes
- Missing authorization signatures
- Missing time or labor cards

Although the standard pay period is two weeks, time and labor cards are compiled every week.

(2) *Fill in Time and Labor Cards Process (2.0).*

The second major process, fill in time and labor cards, has four inputs. They include blank time and labor cards, distribution of labor hours, total hours worked per employee, and current employee listing. Its only output is completed time and labor cards. When time cards are received by the SAG/LMC from the Labor Budget Office, there should be one card for each employee. The lowest level supervisor is responsible for:

- Ensuring there is one card for each employee
- Ensuring information printed on the cards received (employee number, employee name, and period ending date) is correct by comparing with current employee listing
- Accurately recording on the cards each employee's clock-in and clock-out time for both regular and extra hours worked for each day of the week
- Recording the number of hours for each type (i.e., regular, overtime, or leave) of work code identification on a daily basis
- Computing and annotating total regular, and total overtime hours

- Certifying for correctness and sending back to the Labor Budget Office

When labor cards are received from the Labor Budget Office at the SAG LMC level, there should be one card for each employee. The lowest level supervisor is responsible for:

- Ensuring there is one labor card for each employee
- Ensuring information printed on the card when received (date, employee number, employee name, work shift code, hourly rate, work center code) is correct by comparing with the current employee listing
- Accurately recording on the card the job order numbers corresponding to the type work performed by the employee (each job order number includes equipment maintenance code or shop control code, applicable work center, activity, work generalization code, labor class, standard or regular or overtime hours, pay type, premium pay, and amount)
- Ensuring total number of hours distributed equals total number of hours on the time card for each employee
- Computing and annotating total actual hours (regular and overtime)
- Certifying for correctness and sending back to the Labor Budget Office

(3) *Monitor Labor Budget Status Process (3.0).*

The final major process, monitor labor budget status, has seven data inputs and two outputs. Two of its inputs come from the Authorized Accounting Activity and include transaction data, and actual labor dollar expenditures/obligations. Three other inputs come from the Labor Budget Office and include pay adjustments, base pay changes, and employee base pay amount. The final pair of inputs come from the Naval Postgraduate School Comptroller and include budgeted amount for labor, and query on labor budget. As far as the outputs are concerned, there are only two. The first is the employee pay, which goes to the fill in time and labor cards process. The second is the Labor Optar Report, which goes to the Naval Postgraduate School Comptroller.

*c. Second Level Decomposition*

The monitor labor budget status process can also be subdivided into seven processes and one file as shown in Figure 4.5.

(1) *Update SAG/LMC Employee File Process (3.1).*

The update SAG/LMC employee file process (3.1) has two inputs and one output. The two inputs include base pay changes, and old employee base pay amount. Its output is SAG/LMC employee updates. The SAG/LMC employee file must be updated with additions, deletions or modifications. To initiate the update, source documents are scanned for base pay changes or deletions (for update of current

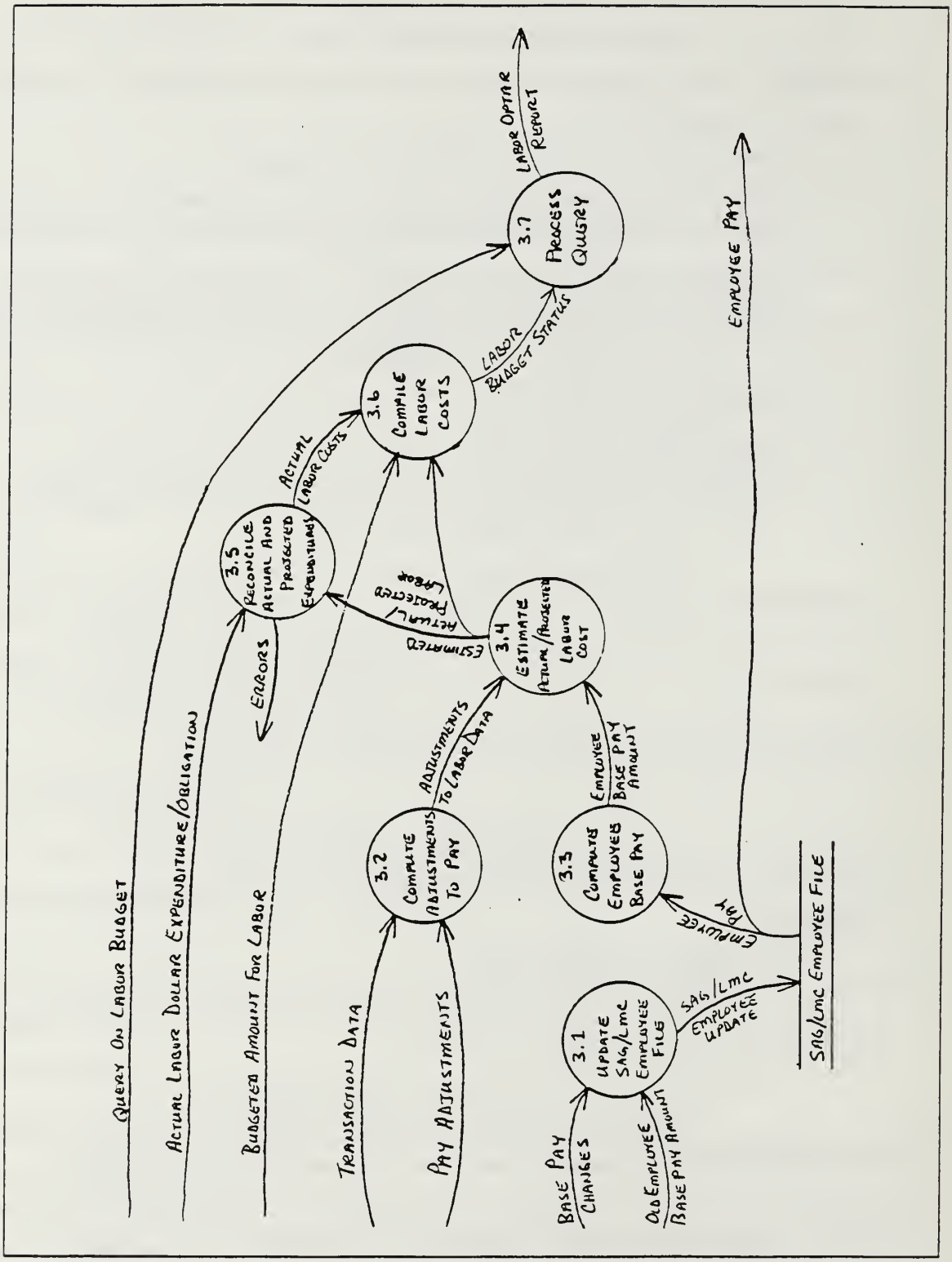



Figure 4.5 Current Logical System (Second Decomposition)

employees) and additions (for update of added employees). Once the appropriate update has been made, a new record is written as the process output to the SAG/LMC file.

(2) *Compute Adjustments to Base Pay Process (3.2).*

The compute adjustments to base pay process (3.2) has two inputs--transaction data, and pay adjustments. Its one output includes adjustments to labor data. Pay adjustments include any checkages or increases to the base pay amount. The current employee listing is used to identify any adjustments which may be job related to a particular billet (i.e., differential pay, premium pay, hazardous duty pay, etc.). Other pay adjustments are computed from other source documents (i.e., fringe credits, incentive awards civilian, etc.). The transaction listing is broken down by SAG/LMC and contains total adjustments paid during a certain pay period. To check for accuracy, this amount can be compared with the computed adjustments. Adjustments are given separate codes (see Appendix A) and are tallied up for each employee.

(3) *Compute Employee Base Pay Changes Process (3.3).*

The compute employee base pay changes process (3.3) has one input--employee pay. Its only output includes employee base pay amount. With reference to the SAG/LMC employee file, the correct base pay amount must be computed for each employee on the payroll. The current version of the SAG/LMC employee file is constantly updated with additions, deletions, and modifications to employee pay. The employee base pay amount consists only of the basic wages that the employee receives for his/her work.

(4) *Estimate Actual/Projected Labor Cost Process (3.4).*

The process named estimate actual/projected labor cost (3.4) has two inputs; they include adjustments to labor data, and employee base pay. The only output from this process is estimated actual and projected labor. For each employee, a base pay amount is added to his/her adjustments, and the result is the amount of compensation provided. Each employee is assigned to a SAG/LMC or department. This process merely groups all employees with like assignments together, and computes a total cost. The output is an estimated actual or projected labor cost for a particular SAG/LMC or department.

(5) *Reconcile Actual with Projected Expenditures Process (3.5).*

Inputs to the reconcile actual with projected expenditures process (3.5) include actual labor dollar expenditures/ obligations, and estimated actual/ projected labor. The only output from this process is actual labor costs. The Authorized Accounting Activity Comptroller produces a report of actual labor dollar expenditures/ obligations. The estimated actual or projected labor figures from the Naval Postgraduate School Comptroller must balance with the reports from the Authorized Accounting Activity. Any differences are indications of error and must be reconciled. When the two inputs to this process are equal, actual labor costs can be derived for each SAG/LMC or department.

(6) *Compile Labor Costs Process (3.6).*

There are three inputs to the compile labor costs process (3.6); they include actual labor costs, budgeted amount for labor, and estimated actual/ projected labor. The only output from this process is labor budget status. This process can make any of the following computations of labor costs for each SAG/LMC group or department:

- Actual versus Budgeted Amounts
- Actual versus Projected Amounts
- Balance of Labor Budget

(7) *Process Query Process (3.7).*

The final process is named process query ( 3.7). Its two inputs are query on labor budget, and labor budget status. This process has only one output, the Labor Optar Report. Using the labor budget status previously computed, a query on that status can be processed to provide information in the form of management reports to the Naval Postgraduate School Comptroller.

(8) *Data Stores.*

There is only one data store (i.e., file) and it is named the SAG/LMC employee file. It has one input named SAG/LMC employee updates, and it provides one output named employee pay.

## F. DESIGN CONSTRAINTS

The primary constraint involves utilizing hardware that is already in place. This hardware was procured to automate several internal office functions for the Naval Postgraduate School Comptroller. For maximum utility, it is desired that this

preselected hardware be considered in the design of the system. The microcomputer system currently available is the Televideo XL System (portable). The following specifications are provided:

- Microprocessor: 16 bit, INTEL 8088, 4.77MHz
- Compatibility: IBM PC/XT
- Memory: 16/32K ROM, 512k RAM
- Disk Storage: Floppy disk = 2 at 360K each, Hard Disk = 1 at 10 MB
- Video Display: 9-inch monochrome, 80 characters/line, 25 lines/screen, external video monitor optional
- Power: Input frequency 60Hz +/- 3 Hz, Minimum 90 VAC, Maximum 137 VAC, Typical 100 - 127 VAC
- Environmental: Operating temperature = 32° - 95° F, Nonoperating temperature = 0° - 110° F, Operating humidity = 10% - 85%, Nonoperating humidity = 5% - 100%
- Operating System: MS-DOS 2.11, GW-BASIC, All IBM/PC Applications

Additional constraints involve procedures which are directed by higher headquarters; they include management guidelines imposed by the Comptroller of the Navy, etc. Also, the current interface with processes at the Authorized Accounting Activity must be preserved.

## G. REFERENCE DOCUMENTS

Reference documents consisting primarily of naval directives are the catalysts for the proposed system. A selected sample of these directives is provided in Appendix B. Although these recent policy changes are to be implemented throughout the Department of Defense, only documents pertaining to the Department of the Navy are provided because they are the only ones considered applicable to the proposed system analysis and design.

## H. DESIGN DESCRIPTION

This section considers certain aspects of the new system to include the data dictionary, new data flow, data structures, and mini-specifications.

### 1. Assumptions

During the design of the proposed system, several assumptions were made to limit its scope and to prevent wasting resources on superfluous details. These assumptions include the following:

- All data inputs are to be available and presented in their respective formats
- All data input reporting requirements are to be satisfied in a timely and accurate manner

- Queries included in the proposed system are to be answered by either or both of two reports (Labor Budget Status or Labor Optar).

2. **Data Dictionary**

The data dictionary is a repository of all data flows and data stores in a data flow diagram. The applicable data dictionary is provided in Appendix C. It is organized into two separate sections. First, the data flows (the pipeline along which data is passed) are defined by the elements they contain. Secondly, the data stores (files that contain information to be used by the system) are defined by the fields contained within each record. All pertinent data flows and data stores are included in the data dictionary.

3. **New Data Flow**

The new data flow is depicted in Figures 4.6 through 4.8. These new logical system data flow diagrams are very similar in appearance to the current logical system data flow diagrams illustrated and explained earlier in this chapter. There are, however, a few subtle differences. As seen in Figure 4.6, an additional output is included in the design of the new logical system. This output is the Labor Optar Report which is sent from the perform labor distribution budget process to the SAG/LMC. This change is also included in the second and third levels of the new logical system (see Figures 4.7 and 4.8). The primary purpose of this additional output in the new logical system is that of automation. The newly automated output is to provide more accurate and more timely management information that should facilitate compliance with the recent policy changes directed by the Comptroller of the Navy.

4. **Data Structure and Mini-Specifications**

A structure chart is a graphics tool for depicting the partitioning of a system into modules, the hierarchy and organization of those modules, and the communication interfaces between the modules. The structure chart for the Naval Postgraduate School Comptroller's new system is presented in Figure 4.9.

At the top of the structure is the process query module. This module receives estimated actual/projected labor and sends it to be processed into the labor budget status. The labor budget status is then processed into two written reports -- the Labor Optar Report and the Labor Budget Status Report.

The estimated actual projected labor cost module produces its information by adding the output from the compute adjustments to pay module with the output from the compute employee base pay module. The remaining modules that are subordinate

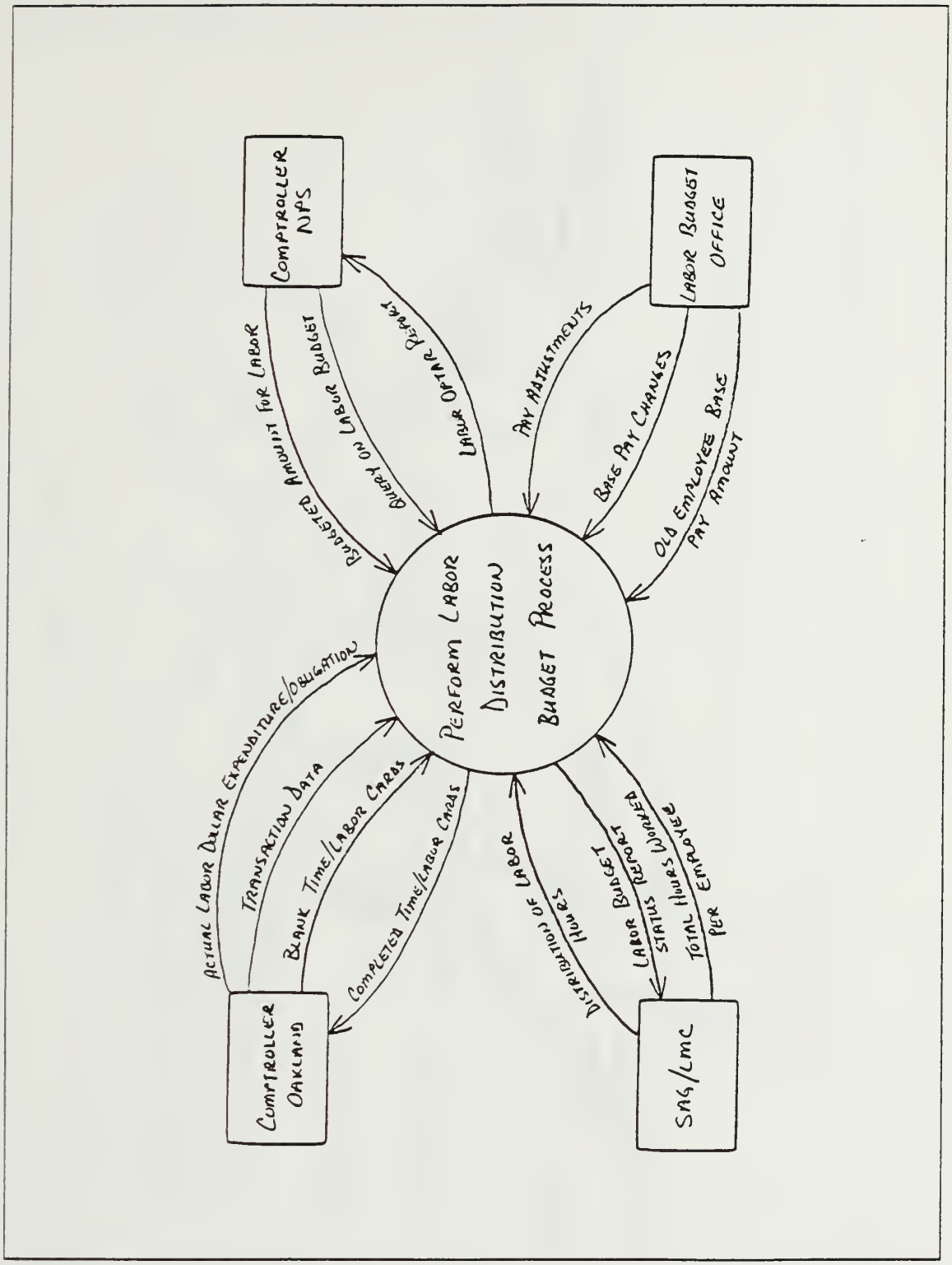



Figure 4.6 New Logical System (Overall)

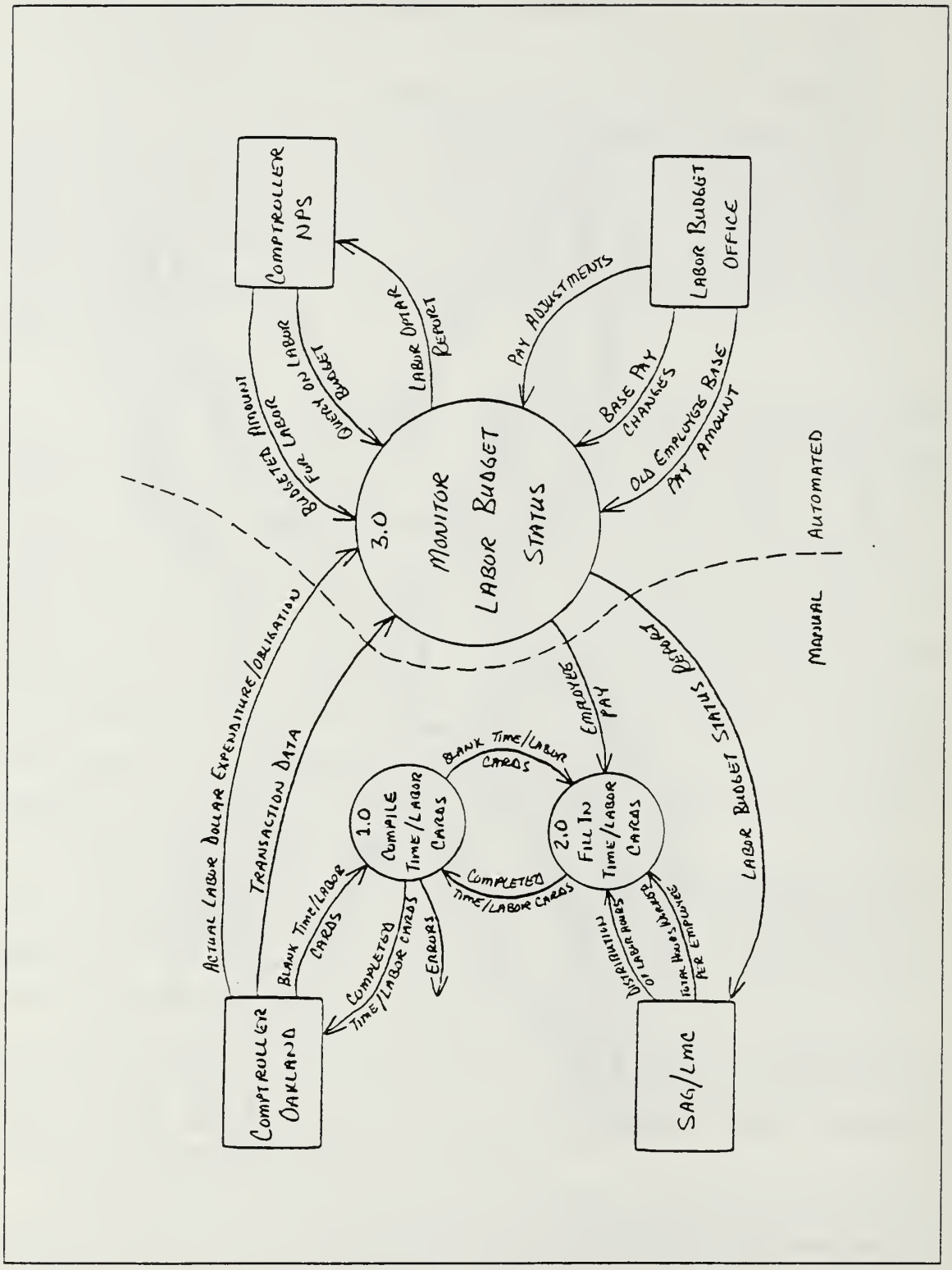



Figure 4.7 New Logical System (First Decomposition)

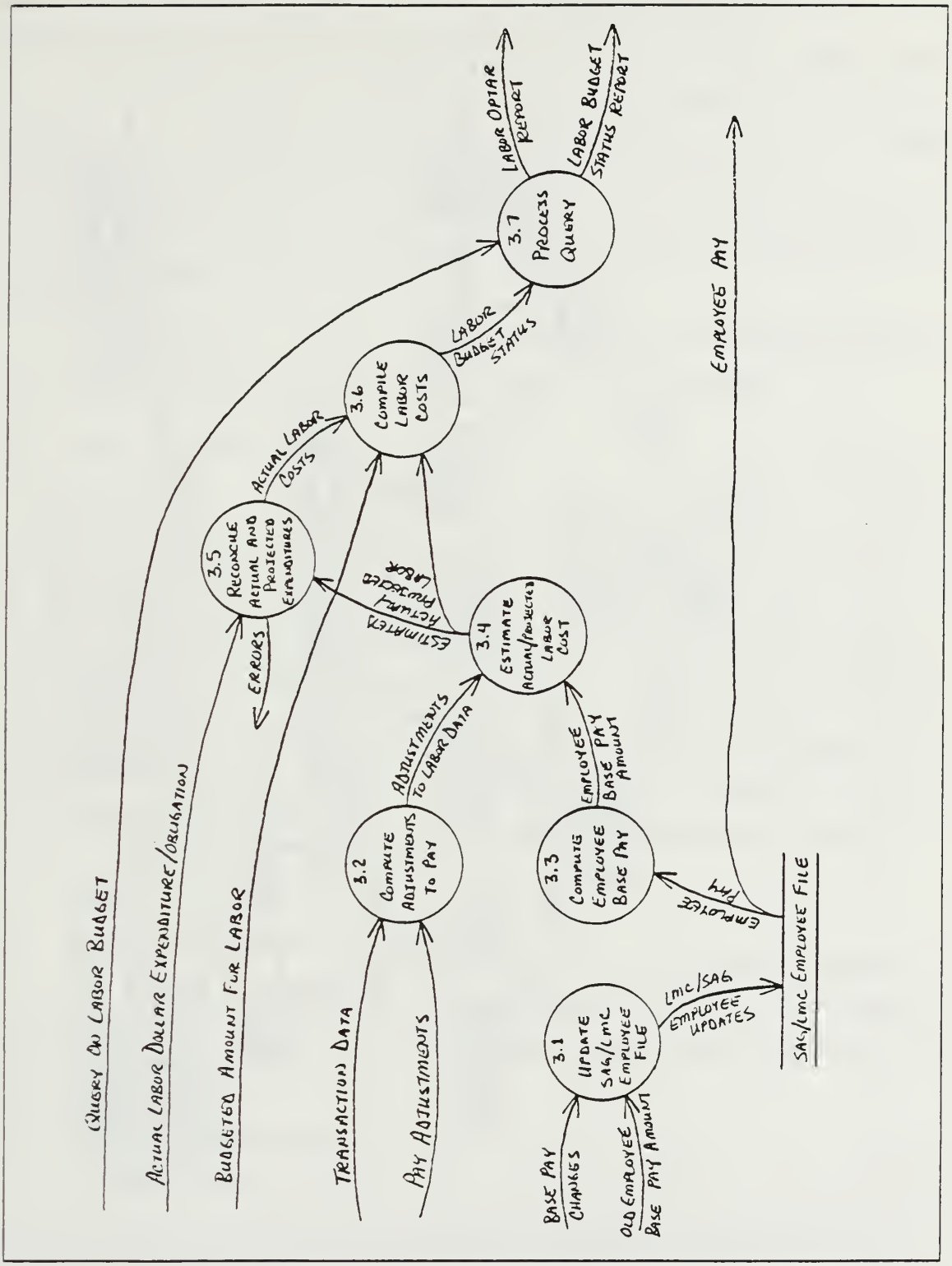



Figure 4.8 New Logical System (Second Decomposition)

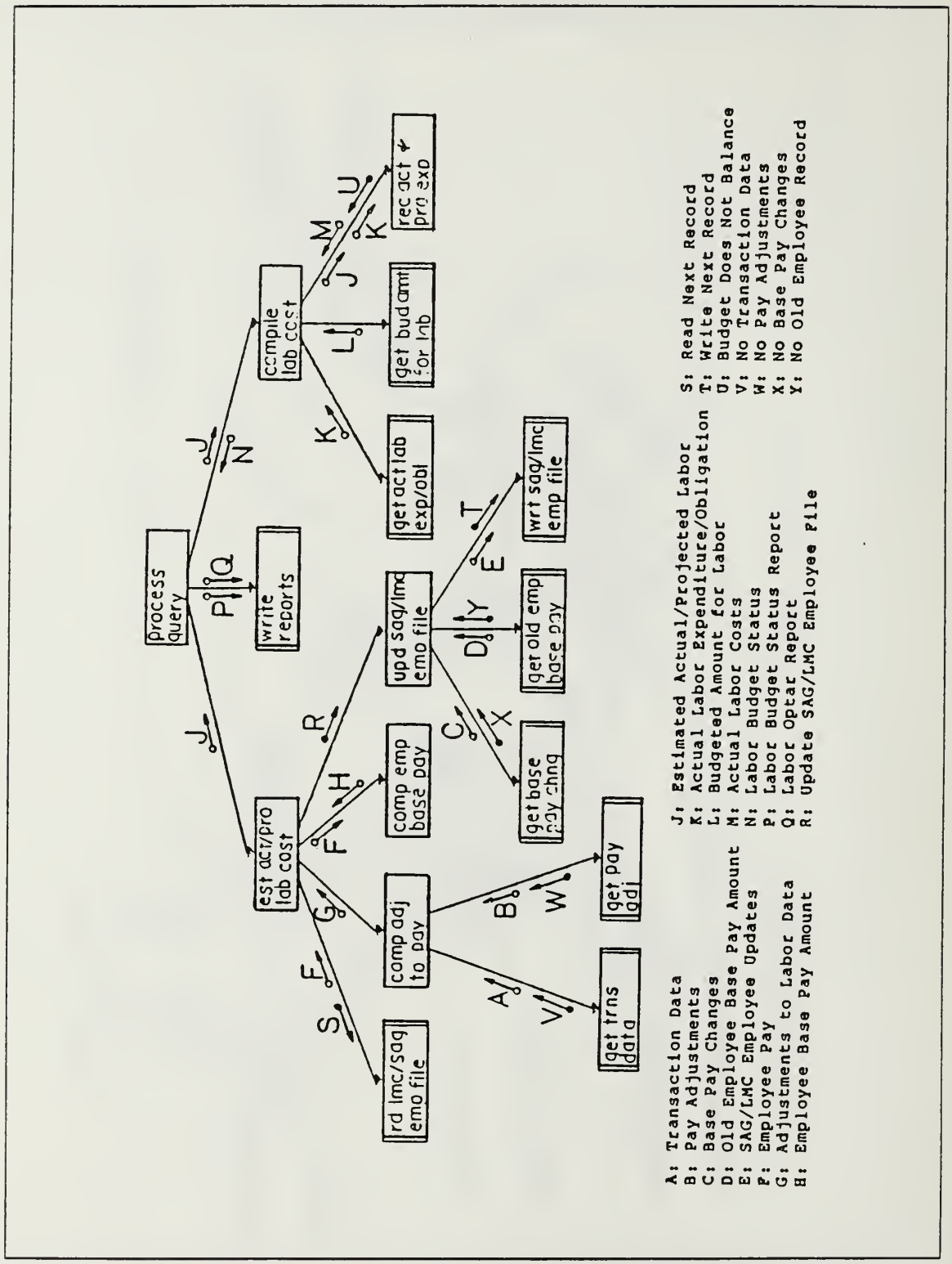

process query
write reports
compile lab cost
get budamt for lab
rec act & pro exp
est act/pro lab cost
get act lab exp/obl
upd sag/lmc emp file
comp emp base pay
wrt sag/lmc emp file
get old emp base pay
get base pay chng
comp adj to pay
get pay adj
get trns data
rd lmc/sag emp file
A: Transaction Data
B: Pay Adjustments
C: Base Pay Changes
D: Old Employee Base Pay Amount
E: SAG/LMC Employee Updates
F: Employee Pay
G: Adjustments to Labor Data
H: Employee Base Pay Amount
J: Estimated Actual/Projected Labor
K: Actual Labor Expenditure/Obligation
L: Budgeted Amount for Labor
M: Actual Labor Costs
N: Labor Budget Status
P: Labor Budget Status Report
Q: Labor Optar Report
R: Update SAG/LMC Employee File
S: Read Next Record
T: Write Next Record
U: Budget Does Not Balance
V: No Transaction Data
W: No Pay Adjustments
X: No Base Pay Changes
Y: No Old Employee Record

Figure 4.9 Structure Chart

to the estimate actual projected labor cost module are coordinated to obtain, update and process information required by the module to perform its function.

The compile labor costs module produces its information by combining the outputs from three modules. The first of these modules provides the actual labor dollar expenditures/obligations; the second of the modules provides the budgeted amount for labor; the third and final module provides the actual labor costs.

A mini-specification for each module in the structure chart is contained in Appendix D. These mini-specifications use structured English to describe how each module performs its function.

A cross reference check was performed to verify that each functional primitive of the data flow diagram corresponds to a module in the structure chart.

## I. MAN-MACHINE INTERFACE

The personnel that will be using the new system are considered to be familiar with the operation of the Televideo XL microcomputer. However, to enhance productivity and ease of operation, the man-machine interface must be designed to facilitate software use. Therefore, the system shall be menu/prompt driven. In addition to thorough indoctrination and training, user guides/documentation shall be provided to illustrate various aspects of system use. The manuals shall provide sample screens and formats in addition to troubleshooting procedures to prevent compromise of data integrity. Due to the sensitive nature of the data to be maintained, system access shall be password protected. Manuals shall also be provided to document the system for possible future modification or maintenance. Sample output report formats are included in Appendix E.

## J. DEVELOPMENT OF SUPPORT PLANS

The purpose for developing support plans is to provide general guidance for implementing the system and training personnel. These two subjects were discussed in great detail with the Naval Postgraduate School Comptroller, and a definitive course of action was agreed upon.

### 1. Implementation Plan

While implementing the system, special consideration must be directed towards keeping operations functioning normally. Business must continue as usual, and there should be little if no effect on the comptroller's daily operations. The best way to accomplish these objectives is to implement the system in a parallel fashion.

This method should not have any significant effect on the comptroller's usual course of business. Parallel implementation also provides the benefit of a test period to solve unexpected problems with the new system while not hindering normal operations.

2. **Training Plan**

The training plan should be tailored to meet the user's needs. Specialized training sessions shall be established to serve this purpose. A special effort shall be made to provide as flexible a training schedule as possible so that there is little effect on employee work routines. Approximately one hour per day for ten working days shall be required to train an employee. This time should be scheduled at the user's convenience.

Before training begins, the employee should be familiar with the computer hardware and software that are to be utilized. This includes the Televideo XL microcomputer and the LOTUS 1-2-3 software package. A solid background in these areas will facilitate the training effort and save time.

The LABORMON System, which was developed especially for the comptroller's applications, shall be the major topic devoted to the training sessions. The LABORMON System was developed using the LOTUS 1-2-3 software package, and any modifications made to it shall require a working knowledge of LOTUS 1-2-3. This is the primary reason why familiarity with LOTUS 1-2-3 is so important.

The comptroller desires to have one key individual trained thoroughly in the system. This key individual shall become the comptroller's resident expert and provide training to other employees. Based on this strategy, a training schedule shall be established to provide the necessary course of instruction for this key individual.

# V. DEVELOPMENT

This chapter is intended to address several areas. First, software development methodologies are discussed and evaluated. Secondly, the development of system procedures are introduced for both users and operations. Finally, various development issues regarding personnel are presented.

## A. PROGRAM DEVELOPMENT

Systems development depends largely upon how programs can be acquired. With this in consideration, three common methods of obtaining computer programs were evaluated for the development of the LABORMON system. These three methods are discussed below.

### 1. Off-the-Shelf

This option is normally defined as the purchase and use of pre-written software, from a vendor source, with capabilities of performing specific functions pertaining to a specific type application. There is very little risk of unsuccessful operation when using these programs, because they have already been subjected to various development tests. It must be anticipated, however, that a specification compromise might have to be made due to the generality of off-the-shelf program development. Any such compromise must be considered against the advantages of easy implementation and establishment of fixed, reliable costs.

### 2. Altered Programs

This option is very similar to the off-the-shelf method with the exception that most specification compromises are eliminated by making alterations to the software package. With this option, the program is more likely to completely meet the design specifications, but there is more risk of program failure along with increases in the the use of resources, time and money. These risks are a result of uncertainties and difficulties in determining alteration scope and its ensuing cost. Additional consideration must also be given to the probability of success for a potential software package.

### 3. Custom Design

This option may be described as providing a "tailor fit" to the system specifications. Selection of this method is considered because there are no two user

needs exactly alike, and a program that does not exist cannot be purchased. There are, however, certain risks involved with this method. First, user requirements must be fully understood in order to be satisfied. A system that appears feasible may prove infeasible due to a wide variance between predictions and actualities. Secondly, the cost of programming may exceed time and budget constraints. Costs and schedules become very difficult to estimate and may be overrun. However, if this option is found to be the only way to satisfy a user need, it may be worth the risk, time and expense.

4. **Selection**

Due to the time and resource constraints within the Comptroller's Office, the first option of program development was selected. If developed with off-the-shelf programs, the tasks of specifying hardware, programs and data are concrete and relatively easy. Consisting primarily of a spreadsheet application, LOTUS 1-2-3 vendor software was selected for the comptroller's system because it facilitated program design and, more importantly, because it was already purchased and possessed by the comptroller. Additionally, the selection of LOTUS 1-2-3 resulted in few compromises worthy of consideration when weighed against the time and resource constraints identified. The LOTUS 1-2-3 vendor software was found to be the viable selection based upon the overall provisions of handling data, working spreadsheets, and producing required reports within the defined hardware constraints.

## B. PROCEDURES

User and operation procedures are discussed in this section. The user procedures are those related to the LABORMON software application developed with LOTUS 1-2-3 for the comptroller. Operations procedures are hardware related.

1. **User**

One of the most important features of the comptroller's new system is the User Manual contained in Appendix F. This manual explains the specific procedures for using the LABORMON system and is the key to it's successful implementation.

The User Manual was written to be "user friendly". It requires a basic knowledge of LOTUS 1-2-3 and the Televideo XL microcomputer. The manual begins with an introduction of how to enter the LOTUS 1-2-3 and LABORMON systems. An overview of the LABORMON system's master menu is then presented to give the user a comprehensive perspective of how the software application is organized. LABORMON system program modes are also explained in detail.

The master menu has several selections that allow the user to create, update, view, print, delete and quit. Instructions for each of these selections are provided for the user's edification.

The view selection mentioned above has a few aspects worth discussing. Within this selection the system has several capabilities. It can create, print and display the Labor Budget Status Report. Additionally, it can perform "what-if" analysis on this same report. Also, the view selection has the capability to update year-to-date hours for an individual LMC. The ability to create and print the Labor Funding Status Report is another capability performed within the view selection.

2. **Operations**

Operations procedures are peculiar to the hardware being utilized. For the comptroller's application, the hardware to be used is the Televideo XL microcomputer. Operations procedures for this microcomputer are provided by the manufacturer and are included in the basic documentation received with the hardware. Familiarity with these procedures is essential for the user's success and can be acquired simply by reading the vendor's user manual. For this reason, a lengthy discussion of the subject can be precluded by directing the user to these manuals and emphasizing their importance.

## C. PERSONNEL

The discussion of personnel that is contained in this section considers job descriptions, organizational structure and training.

1. **Job Descriptions**

Job descriptions provide the basis for matching an employee's talents with the requirements for a particular position. The requirements for several positions shall change when the comptroller's new system is implemented. Those employees involved with LABORMON must not only become familiar with it but must also become familiar with LOTUS 1-2-3 and the Televideo XL microcomputer. The ability to work with an automated system becomes necessary, and this must be reflected by updating an employee's job description.

Updating the current job descriptions may also be very helpful when interviewing new candidates for positions and when determining salary and responsibility levels. Qualifications should be clearly defined in the job description so there is no doubt as to what is expected from a job applicant.

A well defined job description can also aid the Civilian Personnel Office when establishing on-the-job training requirements for the position. When the new system is implemented, it will become necessary for the Wage and Classification Section of the Civilian Personnel Office to review the job descriptions involved, make any necessary changes, and update job classifications.

2. **Organizational Structure**

Because the new system can be implemented without any reorganization of personnel, there is no need to change the existing organizational structure. Although additional skills are required, they shall be reflected in the job description and should have no effect on the organization's present structure.

3. **Training**

The training strategy that the comptroller desires to follow is to teach one key individual all aspects of the new system. This key person is to become the comptroller's resident expert and shall be responsible for training of additional personnel when required. It is important for the comptroller to ensure that anyone who utilizes the system be thoroughly familiar with its intricacies. A thorough training program should be established and administered to an individual before he/she is allowed to work with the system.

The only way to ensure that an employee's skills match his/her position is to establish a training development plan that will bring individual skills and interests in line with the comptroller's requirements. The training needs of each employee should be ascertained before assigning him/her to a position that requires the use of an automated system. If carefully administered, the training program can provide additional skills, improve productivity, and enhance morale within the Comptroller's Office.

# VI. SYSTEM IMPLEMENTATION

This chapter concerns itself with how the comptroller's new system is to be implemented. First, hardware and software installation is examined followed by a discussion of file construction. Next, procedure documentation is covered along with personnel training. The chapter concludes with an examination of the test period and an analysis of the installation method.

## A. HARDWARE AND SOFTWARE INSTALLATION

Few problems are anticipated relative to installing the off-the-shelf programs selected. As discussed earlier, the Televideo XL microcomputer hardware is already installed within the Comptroller's Office. Because the LOTUS 1-2-3 vendor software is currently on-site, installation of the LABORMON system will create few additional requirements. Installation of off-the-shelf programs is mostly a matter of training and coordinating with the users. As requested by the comptroller, the LABORMON system is developed to allow flexibility for user adjustments. As users employ LABORMON, they may wish to make adjustments to screen and report formats. Assuming that the proper training, documentation and coordination are provided, the installation of the LABORMON system is anticipated to be relatively problem free.

## B. FILE CONSTRUCTION

The development of the LABORMON system utilizing the LOTUS 1-2-3 vendor software consists of utilizing three worksheet files. Two of the files (LARPT.WK1 and LARPT2.WK1) contain blank, sectioned report formats for the Labor Budget Status Report. These files are called by the third file (AUTO123.WK1) containing both the data and the programmed macro instructions. The AUTO123.WK1 is named to provide for an automatic load of LABORMON upon initial loading of the LOTUS 1-2-3 software.

The format of the AUTO123.WK1 file can be presented in three separate sections. The first section contains the data file of all local management code records. This section is termed the database section. The second section contains report construction areas used to create the two required reports (Labor Budget Status Report and the Labor Funding Status Report). This section is labelled the report

section. The third section contains the macro program code instructions necessary to perform the LABORMON system functions. This section is referred to as the program section. It contains all the macro statements needed to execute the commands required to perform the design functions of the LABORMON system. Formats and listings of these constructed files are provided in the software documentation contained in Appendix G.

## C. PROCEDURE DOCUMENTATION

Implementation of off-the-shelf software is considered easier than other software selection options because of the proprietary documentation provided. Additional procedures must be documented, however, to provide a thorough understanding of system application development. Software documentation for the LABORMON system is provided in Appendix G. It includes file construction formats, macro program listings, and flowcharts of the LABORMON system as it is implemented with the LOTUS 1-2-3 software. This documentation is provided for reference in the event that future system modifications are required. Procedure documentation concerning the use of the Televideo XL microcomputer and the LOTUS 1-2-3 system software are issued by the appropriate vendor and are not included within this thesis. However, changes and additions to that documentation which are required for user operation of the LABORMON system have been designed and are included as part of the User Manual contained in Appendix F. Appendices F and G together with the vendor documentation manuals provide all the procedure documentation necessary to use or modify the LABORMON system developed with LOTUS 1-2-3 software and the Televideo XL microcomputer hardware.

## D. PERSONNEL TRAINING

As required by the comptroller, the LABORMON system was developed to permit users to employ the system in a fashion which allows for future adjustments/ changes. With this objective in mind, training and coordination become an important consideration. The training strategy to be followed consists of selecting one key person from the Labor Budget Office to serve as a focal point for training and implementation. This strategy reduces potential coordination problems and enhances flexibility in the training schedules of additional users. Included as part of this thesis is the complete training of one key individual. With previous knowledge of the Televideo XL microcomputer and LOTUS 1-2-3 software, the LABORMON system training

should consist of approximately ten hours of instruction to be provided one hour per day for ten days. Flexibility in the periods of instruction is to be provided to ensure a thorough understanding of the LABORMON system at the user's convenience.

## E. TEST PERIOD

Testing is an important process which should verify that the comptroller's new system does what it is supposed to do. The time period required to perform an adequate test of the comptroller's new system falls between 30 and 45 days.

Data from the Transaction Listing (received from the Authorized Accounting Activity in Oakland, CA) is required for initial input to the system. This data is available after every civilian pay period, which comes at intervals of approximately fourteen calendar days. At least two or three periods should be tested, thus arriving at the estimated 30 to 45 days mentioned above. This amount of time is considered adequate to demonstrate that the LABORMON system is functioning in accordance with the comptroller's requirements. If unexpected problems arise, there is enough flexibility to extend the test period beyond the initially estimated time frame.

## F. INSTALLATION METHOD

There are four installation methods to be considered -- the parallel method, the direct conversion method, the pilot method, and the phase-in method.

If the parallel method is used, the comptroller will have the old manual system running simultaneously with the automated system. This method offers the greatest security because the manual system can be relied upon if problems arise or if user confidence is low. Although there may be a duplication of effort, the extra work should not be that significant.

If the direct conversion method is used, the old system will be replaced by the new one, and the comptroller must rely fully upon the automated system. Although this may force the users to make the new system work, there is no other system to fall back on if problems arise. This method is not only risky for developing user confidence in the new system, but also for meeting the comptroller's operational deadlines.

The pilot method, which first implements the system in a small part of the organization, may be impractical. The system cannot be installed in a smaller segment of the comptroller's organization than the Labor Budget Office included as the focus of this thesis.

The phase-in method may be applicable to the comptroller's situation because the automated system can be implemented gradually. This method allows flexibility in training and installation without unnecessary use of resources.

The parallel method discussed above is considered the most suitable for the comptroller's situation. It provides for the old system to remain in use and serve as a back-up if problems are encountered with the new system. This is a particularly important aspect to the comptroller because business must continue without any prolonged or unnecessary interruptions.

The phase-in method mentioned above shall also be considered for certain aspects of implementation. For example, only one key individual shall be trained to work with the system initially. This key individual will train other employees, and use of the system will grow incrementally, therefore, being phased-in gradually.

In summary, the parallel method will be considered the primary implementation method utilized. Certain aspects of the system can also be phased-in gradually. Thus , both the parallel method and the phase-in method are to be utilized with primary emphasis on the former.

# VII. CONCLUSION

The primary focus of this thesis was to develop a proposal for the analysis, design and implementation of an information management system for the Naval Postgraduate School Comptroller. The comptroller's overall mission was defined along with the potential problems associated with accomplishing that mission. An analysis of the comptroller's information requirements was performed, and a feasible alternative was selected and developed to meet those requirements.

The design proposal for the comptroller's new system was not fully implemented at the time that this thesis was completed. However, structured walkthroughs were performed with the users to ensure coverage of all user requirements, and a completed system prototype was presented to the comptroller for implementation. No major problems were identified by the comptroller, and an agreement was reached to coordinate a training schedule to begin system implementation.

Upon completion of this thesis, all system requirements and objectives have been met. The authors of this thesis conclude with the recommendation that further evaluation of the comptroller's automated system requirements be performed on a continuing basis to ensure adequate information systems support. This recommendation encompasses all comptroller requirements, including those found to be both within and beyond the scope of this thesis.

# APPENDIX A
# LIST OF DEFINITIONS AND ABBREVIATIONS

AAA - Authorized Accounting Activity (NSC Oakland)

AG - Activity Group (F3, F4, MZ)

ALSL - Annual Leave Sick Leave

BICK - Back in checkages

CLOCK CODE - Alpha numeric numbers for personnel in specific departments

CRTL - Court Leave

CTTK - Compensatory time taken

EHBA - Employee Health Benefits Act

FGLI - Federal Employee Group Life Insurance

FICA - Federal Insurance Contributions Act

FLSA - Federal Labor Standards Act

FRCR - Fringe Credits

HOLL - Holiday (Leave)

HP - Holiday Pay

HZ - Hazardous Duty Pay

JOB ORDER - Five digit, alphanumeric characters to accumulate specific costs

LABOR ACCELERATION - Percentage by which labor is increased to cover leave charges

LABOR EXCEPTION - When an error exists on labor due to wrong fiscal year or the job order is in error, the system cannot properly charge the costs.

LFAJ - Year End Leave Fringe Adjustment

LINJ - Traumatic Injury Leave

LMC - Local Management Code (funds distributed to this level)

LVCR - Leave Acceleration Credit

LS - Lump Sum Leave (same as Terminal Leave)

ND - Night Differential

NPS - Naval Postgraduate School

NSC, OAKLAND - Naval Supply Center, Oakland, California

OT - Overtime

PP - Premium Pay

RG - Regular Pay

RL - Pay for a Prior Period

RTPA - Retroactive Pay Increase

SD - Sunday Differential

SPUN - Suspense Undistributed

SUPA - Severance Pay

TRML - Terminal Leave

UNEX - Undistributed Expenses

WARD - Incentive Awards Civilian

AG SAG Codes for the Naval Postgraduate School are listed below.

- F3FC - Utility Operations
- F3FD - Base Support
- F3FF - Administration
- F3FG - Supply Operations
- F3FJ - Unaccompanied Personnel Officer Housing (Billeting)
- F3FK - Human Services (Chaplains, Equal Opportunity Office)
- F3FL - Morale, Welfare and Recreation
- F3FN - Communications
- F3FR - Transportation
- F3FV - Security Guards
- F4FA - Maintenance of Real Property
- F4FB - Repair of Real Property
- M8MZ - Mission, Graduate Education
- M8AB - Mission, Civilian Institutions
- M8V1 - Mission, Computer Center
- M8V2 - Mission, Audio Visual

# APPENDIX B
# DIRECTIVES

Directives applicable to the initiation of this thesis are included in the following figures.

- Secretary of the Navy Memorandum dated 16 May 1986 (Figure B.1)
- Assistant Secretary of the Navy for Manpower and Reserve Affairs Memorandum dated 2 June 1986 (Figure B.2)
- Comptroller of the Navy Memorandum dated 23 June 1986 (Figure B.3)

DEPARTMENT OF THE NAVY
OFFICE OF THE SECRETARY
WASHINGTON D C 20350

16 May 1986

MEMORANDUM FOR THE CHIEF OF NAVAL OPERATIONS
COMMANDANT OF THE MARINE CORPS
CHIEF OF NAVAL RESEARCH
ASSISTANT FOR ADMINISTRATION, OFFICE OF THE
UNDER SECRETARY OF THE NAVY

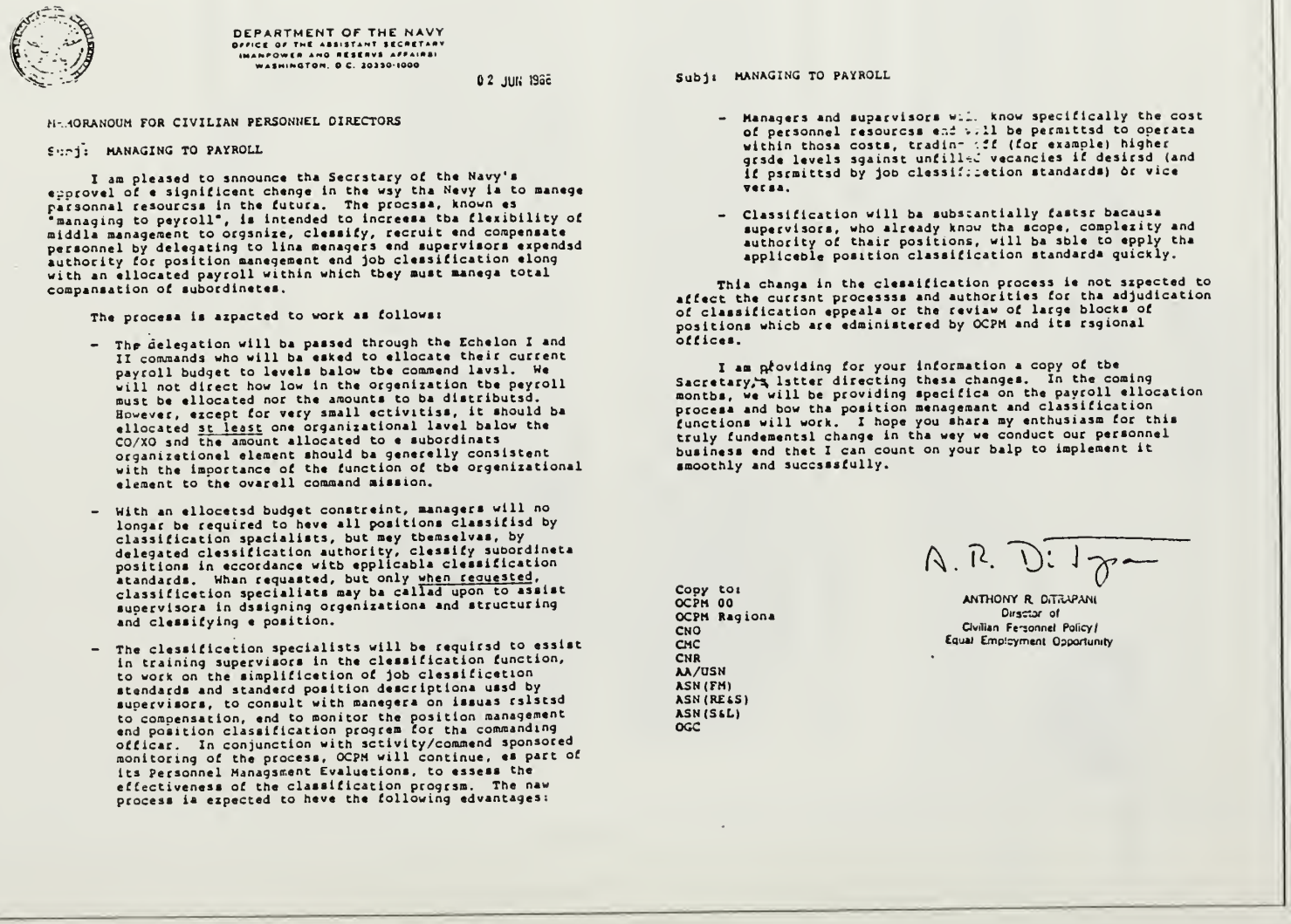
Subj: EFFICIENT USE OF CIVILIAN MANPOWER BY MANAGING TO PAYROLL

Our recent reviews of headquarters and field activities have highlighted problems of high overhead and indirect costs, and insufficient authority, at the operating levels, for efficient personnel administration. These problems can be resolved by placing authority, incentive, and flexibility at the appropriate management levels by permitting managers and supervisors to manage to their payroll down to the lowest practicable level of supervision.

Accordingly, please ensure that your subordinate activities allocate their budgeted levels within their commands to appropriate supervisory levels so that our managers can have authority to manage their own personnel resources, consistent with their authority for management of programs. In this regard, I am asking ASN(M&RA) and the Director of Civilian Personnel Policy/EEO to modify existing personnel job classification and position management procedures to shift final authority and responsibility for these personnel-related functions to line management, effective 1 October 1986.

John Lehman
Secretary of the Navy

Figure B.1 SecNav Memorandum



DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(MANPOWER AND RESERVE AFFAIRS)
WASHINGTON, D.C. 20350-1000

02 JUN 1986

MEMORANDUM FOR CIVILIAN PERSONNEL DIRECTORS

Subj: MANAGING TO PAYROLL

I am pleased to announce the Secretary of the Navy's approval of a significant change in the way the Navy is to manage personnel resources in the future. The process, known as "managing to payroll", is intended to increase the flexibility of middle management to organize, classify, recruit and compensate personnel by delegating to line managers and supervisors expanded authority for position management and job classification along with an allocated payroll within which they must manage total compensation of subordinates.

The process is expected to work as follows:

- The delegation will be passed through the Echelon I and II commands who will be asked to allocate their current payroll budget to levels below the command level. We will not direct how low in the organization the payroll must be allocated nor the amounts to be distributed. However, except for very small activities, it should be allocated at least one organizational level below the CO/XO and the amount allocated to a subordinate organizational element should be generally consistent with the importance of the function of the organizational element to the overall command mission.

- With an allocated budget constraint, managers will no longer be required to have all positions classified by classification specialists, but may themselves, by delegated classification authority, classify subordinate positions in accordance with applicable classification standards. When requested, but only when requested, classification specialists may be called upon to assist supervisors in designing organizations and structuring and classifying a position.

- The classification specialists will be required to assist in training supervisors in the classification function, to work on the simplification of job classification standards and standard position descriptions used by supervisors, to consult with managers on issues related to compensation, and to monitor the position management and position classification program for the commanding officer. In conjunction with activity/command sponsored monitoring of the process, OCPM will continue, as part of its Personnel Management Evaluations, to assess the effectiveness of the classification program. The new process is expected to have the following advantages:

Subj: MANAGING TO PAYROLL

- Managers and supervisors will know specifically the cost of personnel resources and will be permitted to operate within those costs, trading off (for example) higher grade levels against unfilled vacancies if desired (and if permitted by job classification standards) or vice versa.

- Classification will be substantially faster because supervisors, who already know the scope, complexity and authority of their positions, will be able to apply the applicable position classification standards quickly.

This change in the classification process is not expected to affect the current processes and authorities for the adjudication of classification appeals or the review of large blocks of positions which are administered by OCPM and its regional offices.

I am providing for your information a copy of the Secretary's letter directing these changes. In the coming months, we will be providing specifics on the payroll allocation process and how the position management and classification functions will work. I hope you share my enthusiasm for this truly fundamental change in the way we conduct our personnel business and that I can count on your help to implement it smoothly and successfully.

A. R. DiTrapani

ANTHONY R. DITRAPANI
Director of
Civilian Personnel Policy/
Equal Employment Opportunity

Copy to:
OCPM 00
OCPM Regions
CNO
CMC
CNR
AA/USN
ASN(FM)
ASN(RE&S)
ASN(S&L)
OGC

Figure B.2 ASN (Manpower and Reserve Affairs) Memorandum

DEPARTMENT OF THE NAVY
OFFICE OF THE COMPTROLLER
WASHINGTON, D.C. 20350

IN REPLY REFER TO
23 JUN 1986

MEMORANDUM FOR DEPARTMENT OF THE NAVY COMPTROLLERS

Subj: EFFICIENT USE OF CIVILIAN MANPOWER BY MANAGING TO PAYROLL

In his memorandum of 16 May 1986 the Secretary of the Navy approved a change in civilian personnel management procedures intended to result in more efficient personnal administration. This approach will place authority, incantive and flaxibility at appropriate management levels by permitting managers and supervisors to manage their payroll down to the lowest practicable level of supervision. Payroll in this context means employee compensation including salaries, benefits, overtime, leave, and awards. Such action would allow managers more flexibility in managing the grade structure of their organizations, would speed up the position management and classification process, and would enable personnal specialists to provide better staff support, when requested, to line managers in position management, classification and compensation matters.

From a comptroller perspective there is nothing new in this revised personnel administration policy. "Managing to payroll" is really an extension of our traditional approach to controlling civilian manpower costs. In both budget formulation and execution civilian levels are treated as a resource, the costs for which are a separate and identifiable subelement. Civilian levels and their attendant costs are always tied to program, and Department of the Navy claimants are held responsible for executing their missions and programs with the available resources. This concept is intended to provide to middle management both payroll visibility and accountability through payroll allocation consistent with approved program and budget levels.

With managing to payroll, there will be no separate execution controls on work years or on the numbers of high-grade positions. Control will rather be applied by the exercise of increased personnal flexibility by line managers which must occur within budgeted payroll costs. Accordingly, responsibility for conforming to budgeted payroll levels would have to be delegated to the same level as the personnal management authorities. The level to which both personnel and payroll responsibility would be delegated would be up to each major claimant, but the intent is to delegate responsibility for manpower costs below the headquarters or field activity command level. Obviously such delegation would have to be consistent with fiduciary and legal authorities attendant to stewardship of public funds.

The amount of funding available for civilian compensation will be determined through the budget review process. Based on the approved budget, civilian compensation figures by major claimant at the appropriation level will form the baseline and provide maximum levels for distributing payroll amounts.

Subj: EFFICIENT USE OF CIVILIAN MANPOWER BY MANAGING TO PAYROLL

It is clear that civilian employment will be increasingly managed as an element of cost. It is essential that your budget submissions reflect accurate estimates of civilian resources required to execute approved programs financed in the budget. With a balanced civilian manpower budget to form a baseline, managing by payroll should result in more efficient execution of the Department's program.

R H CONN

Figure B.3 NavComp Memorandum

# APPENDIX C
# DATA DICTIONARY

## 1. DATA FLOWS

ACTUAL LABOR COSTS = [ local management code | subactivity group code | department code ] + [ estimated actual/projected labor | labor dollar expenditures ]

ACTUAL LABOR DOLLAR EXPENDITURES/OBLIGATIONS = subactivity group code + total actual labor hours worked + total actual labor dollar expenditures + total actual labor dollar obligations

ADJUSTMENTS TO LABOR DATA = [ local management code | subactivity group code | department code ] + ( employee number + employee name + back-in checkages + retro-active pay increase + fringe credit + severance pay + incentive awards civilian + night differential + sunday differential + premium pay + hazardous duty pay + holiday pay + pay for a prior period ) + [ expensed and paid fringe expenditures | expensed and paid fringe obligations ]

BASE PAY CHANGES = employee name + billet number + ( employee pay grade/step changes + employee additions + employee deletions )

BUDGETED AMOUNT FOR LABOR = ( local management code + subactivity group code ) + [ work center | activity ] + ( job order number ) + authorized amount for labor

DISTRIBUTION OF LABOR HOURS = *employee name* + { job order number + [ equipment maintenance code | shop control ] + work center + activity + work generalization code + labor class + standard hours + regular hours + overtime hours + pay type + premium pay + amount }

EMPLOYEE BASE PAY AMOUNT = employee number + employee name + employee pay grade/step + grade/step annual salary

EMPLOYEE PAY = [ SAG | LMC ] + employee name + employee number + employee pay grade/step + employee annual salary + billet number

ESTIMATED ANNUAL PROJECTED LABOR = [ local management code | subactivity group code | department code ] + adjustments to labor data + employee base pay amount

LABOR BUDGET STATUS = [ labor budget status report | labor optar report ]

LABOR BUDGET STATUS REPORT = [ local management code | subactivity group code | activity group code ] + ( [ work center | activity ] ) + pay period ending date + expensed and paid adjustments amount + daily salary rate + total number of work/paid days past + number of work/paid days left per quarter + total number of work/paid days left + number of remaining pay periods + number of months left per quarter + projected additional labor obligations per quarter + projected reduction of labor obligations per quarter + projected other labor adjustments per quarter + actual labor obligations by quarter + actual authorized amount for labor by quarter + actual authorized amount for labor by quarter + cumulative budget status by quarter

LABOR DISTRIBUTION CARD = employee number + *employee name* + shift code + hourly pay rate + work center + pay period + ( job order number + [ equipment maintenance code | shop control ] + work center + activity + work generalization code + labor class + standard hours + regular hours + overtime hours + pay type + premium pay + amount ) + supervisor authorization

LABOR OPTAR REPORT = local management code + subactivity group code + [ work center | activity ] + authorized labor end-strength + on-board labor end-strength + department code + ( authorized amount for labor through current date + obligated amount for labor through current date + projected obligated amount for labor to future date ) + labor expenditure balance

OLD EMPLOYEE BASE PAY AMOUNT = employee number + employee name + employee pay grade/step + grade/step annual salary

PAY ADJUSTMENTS = [ employee number | employee name | local management code | subactivity group code ] + ( back-in checkages + retroactive pay + fringe pay + severance pay + incentive awards civilian + night differential + sunday differential + premium pay + hazardous duty pay + holiday pay + pay for a prior period )

QUERY ON LABOR BUDGET = local management code + subactivity group code + [ work center | activity ] + authorized amount for labor + current obligated amount for labor + projected obligated amount for labor + labor expenditure balance

TIME CARD = employee number + *employee name* + pay period + regular hours + ( overtime hours + annual leave + sick leave + court leave + holiday leave + terminal leave + compensatory time leave + traumatic injury leave + year end leave + administrative leave + leave without pay ) + supervisor authorization

TOTAL HOURS WORKED PER EMPLOYEE = *employee name* + regular hours + ( overtime hours + annual leave + sick leave + court leave + holiday leave + terminal leave + compensatory time leave + traumatic injury leave + year end leave + leave acceleration credit + lump sum leave + administrative leave + leave without pay )

TRANSACTION DATA = [ local management code | subactivity group ] + labor expensed and paid amount + pay period ending date + labor expensed and paid hours

## 2. DATA STORES

LMC/SAG EMPLOYEE FILE = { revision date + subactivity group code + evaluation of position description date + billet title + employee pay grade/step + pay grade/step annual salary + funding code + tenure + work schedule code + billet number + employee name + employee termination date + office code + billet expiration date + clock number + count number }

# APPENDIX D
# MINI-SPECIFICATIONS

GET TRANSACTION DATA: for each SAG/LMC, get labor expensed and paid amount.

GET PAY ADJUSTMENTS: for each SAG/LMC, get pay adjustments.

COMPUTE ADJUSTMENTS TO PAY: for each SAG/LMC, let adjustments to base pay = labor expensed and paid amount + pay adjustments.

GET BASE PAY CHANGES: for each employee name or employee number, get base pay changes.

GET EMPLOYEE BASE PAY: for each employee name or number, get base pay.

WRITE SAG/LMC EMPLOYEE FILE: for each employee name OR employee number, write SAG/LMC file updates.

UPDATE SAG/LMC EMPLOYEE FILE: for each employee name OR employee number, let SAG/LMC employee update = base pay changes + employee base pay.

READ SAG/LMC EMPLOYEE FILE: for each SAG/LMC, read current employee listing.

COMPUTE EMPLOYEE BASE PAY: for each SAG/LMC, compute total base pay.

ESTIMATE ACTUAL/PROJECTED LABOR COSTS: for each SAG/LMC, let estimated actual/projected labor costs = adjustments to base pay + employee base pay.

GET ACTUAL LABOR EXPENDITURE/OBLIGATION: for each SAG/LMC, read actual labor expenditure/obligation.

RECONCILE ACTUAL AND PROJECTED EXPENDITURES: for each SAG/LMC, if estimated actual/projected labor < > actual labor expenditures/obligations, then reconcile differences, else let actual labor costs = estimated actual/projected labor OR actual labor expenditures/obligation.

GET BUDGETED AMOUNT FOR LABOR: for each SAG/LMC, get budgeted amount for labor.

COMPILE LABOR COST: for each SAG/LMC, let labor budget status = actual labor expenditures/obligations AND actual labor costs AND budgeted amount for labor.

PROCESS QUERY: if query = SAG/LMC, then write labor budget status report, else if query = Naval Postgraduate School Comptroller, then write labor optar report.

WRITE REPORTS: write labor budget status report OR labor optar report.

# APPENDIX E
# OUTPUT REPORT FORMATS

Sample formats of the two reports produced by LABORMON are contained in the following figures.

- Labor Budget Status Report (Figure E.1)
- Labor Funding Status Report (Figure E.2)

LABOR BUDGET STATUS REPORT
ACTIVITY
LOCAL MANAGEMENT CODE 0101
SUBACTIVITY GROUP CODE MA
ACTIVITY GROUP CODE 01

PERSONAL SERVICES OBLIGATIONS

| Basis for Projected Obligations | | RECRUITS | | | | SEPARATIONS | | | | OTHER PERSONNEL ACTIONS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Projected Additional Obligations | | | | Projected Reduction to Obligations | | | | Projected Adjustments (+/-) | |
| Pay Period Ending | 12/11/94 | | | | | | | | | | |
| Expended for Pay Periods | 836,679.00 | | | | | | | | | | |
| Daily Salary Rate | 95,667.21 | | | | | | | | | | |
| Projected Rate | | | | | | | | | | | |
| Number of Days Left in: | | | | | | | | | | | |
| Quarter 1: | 43 | | | | | | | | | | |
| Quarter 2: | 64 | | | | | | | | | | |
| Quarter 3: | 63 | | | | | | | | | | |
| Quarter 4: | 63 | | | | | | | | | | |
| Total Paid Days: | 253 | | | | | | | | | | |
| Remaining Pay Periods: | 23 | | | | | | | | | | |
| Months Left in: | | | | | | | | | | | |
| Quarter 1: | 0 | | | | | | | | | | |
| Quarter 2: | 3 | | | | | | | | | | |
| Quarter 3: | 3 | | | | | | | | | | |
| Quarter 4: | 3 | | | | | | | | | | |
| Current Hours: | 624.0 | | | | | | | | | | |
| Current Daily Hours: | 63.4 | | | | | | | | | | |
| Prior Year To-Date Hours: | 0.0 | | | | | | | | | | |
| Current Year To Date Hours: | 624.0 | | | | | | | | | | |
| Adj Workhour Production: | 14,153.0 | | | | | | | | | | |

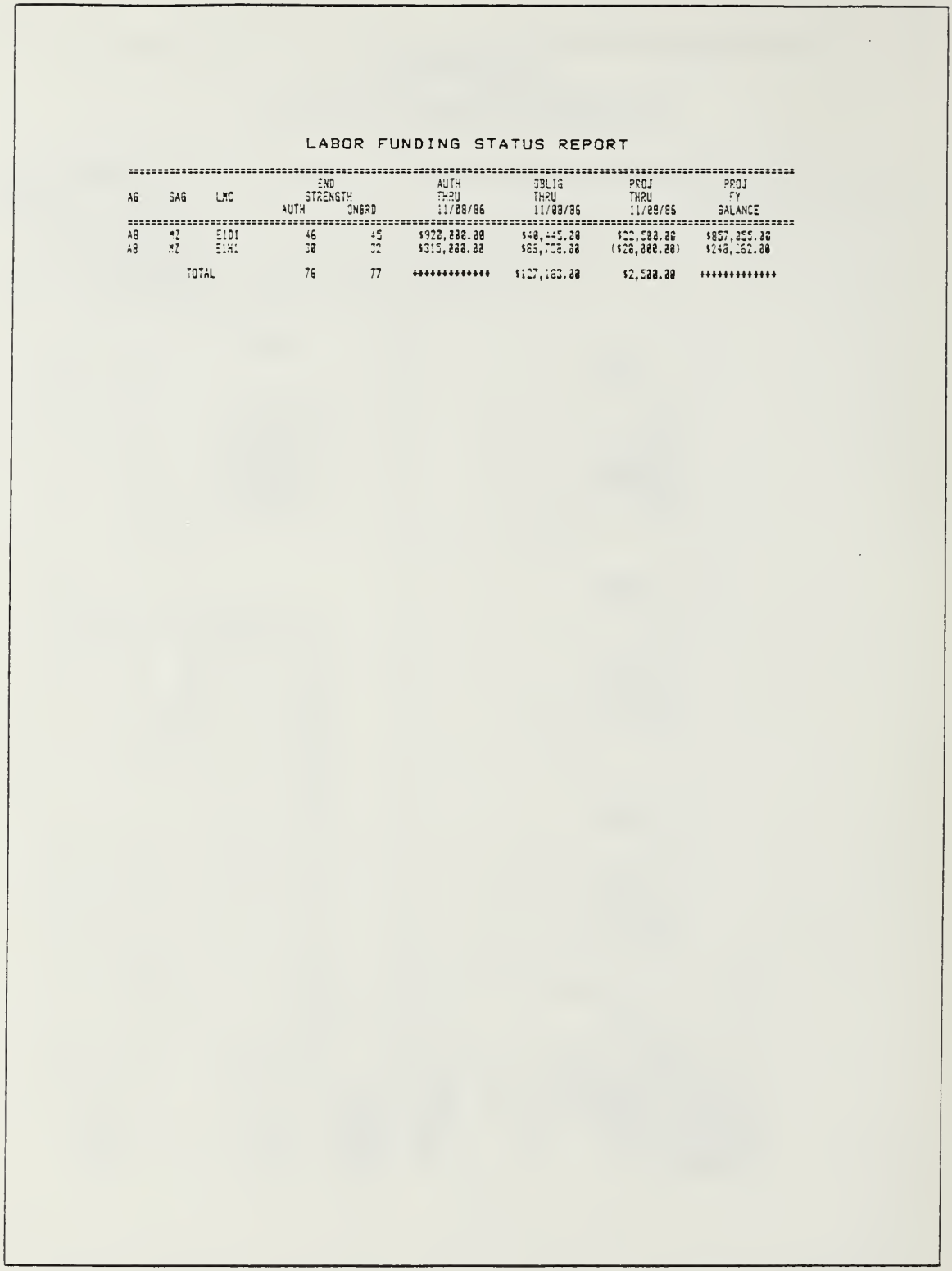
LABOR BUDGET STATUS REPORT
MONTH END
LOCAL MANAGEMENT CODE 0101
SUBACTIVITY GROUP CODE MA
ACTIVITY GROUP CODE 01

| | QUARTERLY ALLOCATION | | | | ACTUAL OBLIGATIONS/QUARTER | | | | CUMULATIVE BUDGET STATUS BY QUARTER | | | | BAR YEAR PROJECTIONS (AT) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1ST QTR | 2ND QTR | 3RD QTR | 4TH QTR | 1ST QTR | 2ND QTR | 3RD QTR | 4TH QTR | | | | | | |
| PERSONAL SERVICES | $1,343,269 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | | | | | End/Strength (On Board) | 654 |
| OTHER OBLIGATIONS | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | | | | | Hours-to Date (Act) | 0.54 |
| TRAVEL | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | | | | | To-Date AT Utilization | 14,153.0 |
| TOTAL: | $1,343,269 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | | | | | Projected Estimate (Hrs) | 7.74 |
| | | | | | | | | | | | | | Projected AT Utilization | |
| | | | | | | | | | | | | | Balance To Date (HT) | 6.44 |
| | | | | | | | | | | | | | Projected Balance (HT) | (0.74) |

CUMULATIVE BUDGET STATUS BY QUARTER

| | FIRST QUARTER | | | | SECOND QUARTER | | | | THIRD QUARTER | | | | FOURTH QUARTER | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Obligations | | | | Obligations | | | | Obligations | | | | Obligations | | | |
| | Budget | To Date | Projected | Balance | Budget | To Date | Projected | Balance | Budget | To Date | Projected | Balance | Budget | To Date | Projected | Balance |
| PERSONAL SERVICES | $1,343,269 | $0 | $255,851 | $1,088,218 | $1,343,269 | $0 | $617,790 | $725,479 | $1,343,269 | $0 | $386,197 | $957,072 | $1,343,269 | $0 | $1,343,269 | $0 |
| OTHER OBLIGATIONS | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| TRAVEL | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| TOTAL: | $1,343,269 | $0 | $255,851 | $1,088,218 | $1,343,269 | $0 | $617,790 | $725,479 | $1,343,269 | $0 | $386,197 | $957,072 | $1,343,269 | $0 | $1,343,269 | $0 |

Figure E.1 Labor Budget Status Report



LABOR FUNDING STATUS REPORT

| AG | SAG | LMC | END STRENGTH AUTH | END STRENGTH ONBRD | AUTH THRU 11/88/86 | OBLIG THRU 11/88/86 | PROJ THRU 11/89/86 | PROJ FY BALANCE |
|---|---|---|---|---|---|---|---|---|
| A8 | *I | E1D1 | 46 | 45 | $922,288.88 | $48,445.88 | $22,588.28 | $857,355.88 |
| A8 | MI | E1H1 | 38 | 32 | $315,288.32 | $85,728.88 | ($28,888.28) | $248,152.88 |
| | TOTAL | | 76 | 77 | ++++++++++++ | $127,163.88 | $2,588.88 | ++++++++++++ |

Figure E.2 Labor Funding Status Report

# APPENDIX F
# USER MANUAL

The LABORMON User Manual is provided separately in this appendix to allow for easy extraction by the user.

# USER MANUAL

# LABOR BUDGET

# MONITORING SYSTEM

# (LABORMON)

## USER MANUAL OBJECTIVES

This manual is written with the assumption that the user of the LABORMON System has been trained in using LOTUS 1-2-3 at the familiarity level that can be obtained by completion of the LOTUS 1-2-3 Tutorial. This introductory training can be mastered by using the documentation provided with the purchased software. The LABORMON System is written utilizing LOTUS 1-2-3 (release 2.0) macros to streamline the worksheet process. Basic program operational commands are stressed, with little emphasis on more advanced or sophisticated operations. In order to use the LABORMON System successfully, the user is expected to be familiar with LOTUS 1-2-3 concepts and objectives.

Additionally, the LABORMON System assumes all data entry requirements are accurately performed. Although various individual data edits exist within LABORMON, there are no edits to preclude erroneous data entries. To ensure accurate output from the LABORMON System, the user must manually check for accurate input. Just remember: GIGO (Garbage-In, Garbage-Out).

## UNIT 1: ENTERING THE LOTUS LABORMON SYSTEM

**Objective = = >**

Beginning with the computer turned off, the participant shall enter the appropriate command sequences to load the Lotus LABORMON System. First, a set of command sequences is presented for dual floppy disk drive systems, and second, a set of command sequences is presented for hard disk drive systems. The participant should go to the set of command sequences that is applicable to his/her particular system.

**Procedure/Commands = = >**

*For Dual Floppy Disk Drive Systems*:

1. Turn the computer on.
2. Place the MS-DOS system disk in drive A.
3. When the time prompt appears, type in the current time in 24-hour clock format, then press return (e.g., 14:15).
4. When the date prompt appears, type in the current date, then press return (e.g., 10-21-1986).
5. Replace the MS-DOS system disk in drive A with the LOTUS 1-2-3 system disk and place the data disk (LABORMON) in drive B.
6. Type 123 at the A> prompt and press return.
7. A long delay of 3 to 4 minutes will occur, so be patient! We suggest that you use this time constructively by reading Units 2 and 3 below. Actual practice on the computer will not begin until Unit 4.

*For Hard Disk Drive Systems*:

1. Turn the computer on.
2. When the time prompt appears, type in the current time in 24-hour clock format, then press return (e.g., 14:15).
3. When the date prompt appears, type in the current date, then press return (e.g., 10-21-1986).
4. When the E> prompt appears, type LOTUS, then press return.
5. When the instruction appears on the screen, place the data disk (LABORMON) in the floppy disk drive, then press return.
6. When the Lotus access system appears on the screen, use the cursor movement keys to move the cursor to the 1-2-3 selection and press return.
7. A long delay of 3 to 4 minutes will occur, so be patient! We suggest that you use this time constructively by reading Units 2 and 3 below. Actual practice on the computer will not begin until Unit 4.

## UNIT 2: OVERVIEW OF THE LABORMON SYSTEM MASTER MENU

**Objective = = >**

Using the LABORMON System in the ready mode, the participant shall become familiar with:

- The six master menu options available
- The capabilities of the six master menu options
- The procedures to select a desired master menu option

**Description = = >**

The six master menu options are listed below. Just read through the unit to become familiar with them. Use of the computer is not required yet.

1. CREATE--Create new LMC Labor record
2. UPDATE--Update existing LMC labor record file
3. VIEW--Display existing AG SAG LMC Labor Budget Status Report
4. PRINT--Print Labor Budget Status Report
5. DELETE--Delete existing LMC labor record
6. QUIT--End session

The capabilities of each master menu option are explained below.

1. CREATE = = > Selection of this option will prompt the user for input necessary to create a labor budget record for individual local management codes. The user will be able to create one or more records. Upon completion of the data entering, there is an option to either add or discard the newly created labor records.

2. UPDATE = = > Selection of this option will prompt the user to enter the selection criteria which is used to find the desired labor record(s) requiring updating. Once the selection criteria is entered, the system will find the appropriate record(s) and allow the user to update the necessary information. Upon completion of the updates, there is an option to either add or discard the updated record(s).

3. VIEW = = > Selection of this option will prompt the user to enter the selection criteria which is used to find the necessary labor budget data needed to create the desired Labor Budget Status Report. Reports can be created for both individual local management codes or groups of local management codes consolidated at the sub-activity group or activity group level. Once the criteria is entered and the report is created, the user has the option of printing the report or displaying it on the screen. Additional options are presented that will provide the ability to update information on the report and in the labor file. A second report can also be produced to provide a document, which can be used as an enclosure to a letter, showing the status of labor funding at the local management code sub-activity group activity group level.

4. PRINT = = > Selection of this option will output to the printer the last Labor Budget Status Report created stored by the system. This option will most likely be used only on those occasions when additional copies of such a report are requested (since a print option is available under the VIEW option).

5. DELETE = = > Selection of this option will prompt the user to enter the selection criteria which is used to find the desired labor record(s) that need to be deleted from the data base. Prior to deletion of the record(s) the system will prompt the user to verify the requested deletion.

6. QUIT = = > Selection of this option will terminate the LABORMON System and return the user to the MS-DOS system A > prompt.

**Procedure/Commands = = >**

The procedures for selection of the master menu options are explained below.

1. The master menu options are displayed on line two of the control panel. Each of these options can be used to provide a variety of functions. The user can move through the menu in one of two ways:

   a. Use the right or left cursor movement keys until the desired selection is highlighted with the cursor then press return, or,

   b. Type the first letter of the menu option desired.

2. It should be noted that as the cursor moves from menu item to menu item, line three of the control panel displays a brief functional description of the highlighted option. This should be used to guide the user in selection of the appropriate option.

## UNIT 3: LABORMON SYSTEM PROGRAM MODES

**Objective = = >**

While using the LABORMON System, the participant shall be able to interpret the program modes displayed to ensure proper use and functioning of the system/ program.

**Description = = >**

Don't worry about using the computer yet. Just read through this unit and become familiar with the information in it. There are several program modes used in Lotus 1-2-3. During operation of the LABORMON System, the highlighted block at the top right corner of the control panel displays the current mode. The current mode indicated during use will be the user's guide to system use and should be checked prior to any entry. The following is a list of modes which will be displayed during program execution.

- MENU is displayed when the program is prompting the user to select an appropriate option from a menu of choices. When this mode is displayed, the

user can use the cursor movement keys to view menu options. To select a menu option, the user may position the cursor over the desired option and press return, or, just type the first character of the desired option.

- READY is displayed when the program is waiting for user input. Data can be entered by typing the appropriate data and pressing a cursor movement key to continue with the next entry or pressing the return key to resume program execution.
- LABEL is displayed when the user enters character type data into a cell of the program worksheet.
- VALUE is displayed when the user enters numerical type data or +, -, @, or ().
- EDIT is displayed when the user is allowed to correct cell entries.
- HELP is displayed if the user accidently press the F1 (help) key. The help facility presented in this case is for the LOTUS software alone and does not make reference to the Labor Budget Monitoring System. With the LOTUS help mode, the user shall enter the appropriate command sequences to bring up the help index and make selection of available help topics or return to the program control.
- WAIT is displayed while LABORMON is working. The user should not attempt to enter any data or press any keys while this mode is displayed. When this mode is displayed, it will usually be displayed in a blinking fashion.

## UNIT 4: MASTER MENU SELECTION = = > CREATE

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select CREATE and describe the process that will be performed by doing so
- Create a new local management code record and save or delete those newly created records in the LABORMON System data base.

**Description = = >**

A description of the CREATE process will now be discussed. Don't press any keys until you completely finish reading this paragraph. Paragraph B (below) is where the fun begins! To select CREATE, follow the procedures outlined in Selection of Master Menu Options (unit #2). This process will prompt the user for information that is contained in the data base on each local management code. This is done through the use of a data entry form by typing the information requested by the highlighted cursor. To enter the information onto the form or to move to the next

*** CAUTION ***

Do not press return to enter data items onto the form. Instead, press the cursor movement key in the direction you want to move the cursor, and the data will be entered automatically. Unknown data items may be left blank.

data item, the user will press either the up or down cursor movement keys. The cursor cannot move outside the data entry form. Erroneous data entered onto the data entry form can be corrected by entering the correct data over the bad data. Once all known data is entered on the data entry form and verified to be correct, the user must press

*** NOTE ***

This is the only time that return should be used--that is *after* all known data is entered onto the form.

return to cause the data to be added to the LABORMON data base. After the record entry, LABORMON will prompt the user to either CONTINUE (create another record) or STOP (stop entering records). If the user chooses to continue, the process is repeated with a clean data entry form. If the user chooses to stop, LABORMON will prompt another menu to either update (save the newly created record(s)) or discard (do not save the newly created record(s)). If the user chooses to update, LABORMON will save the record(s) and return to the master menu. If the user chooses to discard, LABORMON will restore itself, to exclude any newly created records, and return to the master menu. Now it's time for some hands-on experience. Continue below!

**Procedure/Commands = = >**

1. Select CREATE on master menu.
2. When the data entry form appears on the screen, the cursor will highlight the requested data. To move from item to item within the data entry form, use the cursor movement keys. To enter data, move the cursor highlight to the appropriate area and type the input data. This typed input data will appear in the control panel until a cursor movement key is pressed, which will place the data on the data entry form. The following is a description of each item and the format which the data must be entered:
    - ACTIVITY GROUP = This is the two character code describing the activity group which pertains to the created record. This code may consist of alphabetic or numeric characters in any combination. However, if the first character is to be numeric, press ' before entering data (i.e., MZ or M8 or '1Z or '22). Now enter some data!

*** CAUTION ***

This is to remind you to use the cursor movement keys to enter data typed on the control panel. Do not press return until all known data has been entered and you are ready for LABORMON to resume the CREATE process.

*** NOTE ***

Ensure all entries are verified to be correct. Remember: GIGO (Garbage-In, Garbage-Out).

- SUBACTIVITY GROUP = This is the two character code describing the subactivity group which pertains to the created record. The format of this entry is the same as the activity group (i.e., MZ or M8 or '1Z or '22). Try it!

- LOCAL MANAGEMENT CODE = This is the four character code describing the local management code which pertains to the created record. The format of this entry is the same as the AG and SAG with the exception of being four characters long vice two (i.e., M81Z or '1B3C). Enter some data!

- E&P PAYMENT (TL) = This is the dollar amount that has been expensed and paid for the LMC record that is being created. The source document from which this figure may be obtained is the current Transaction Listing (TL) pertaining to the created record. This is a numeric entry and will accept any dollar amount from $0.00 to $999,999.99. The "$" sign and "," need not be entered. LABORMON will automatically place those into the data. If a decimal point (for cents) is not entered, LABORMON will assume ".00" and include that as part of the entry (i.e., 3440 or 3440.54). Do it!

- E&P HOURS (TL) = This is the number of labor hours that has been expensed and paid for the LMC record that is being created. The source document from which the figure can be obtained is the current TL pertaining to the created record. This is a numeric entry and will accept any numeric amount from 0.0 to 99,999,999.9 hours. The "," need not be entered as LABORMON will automatically insert them. If a decimal point (for tenths of the hour) is not entered, LABORMON will assume ".0" and include that as part of the entry (i.e., 8413 or 8413.6). Do it again!

- ACTUAL END STRENGTH = This is the number of personnel that are "on-board" working in the LMC that the record is being created for. The source document from which this figure can be obtained is the current LMC SAG Employee Listing. This is a numeric entry and will accept any whole number from 0 to 999,999,999. LABORMON will insert commas. If the user attempts to enter a decimal, LABORMON will round the entry to the nearest whole number (i.e., 64). Enter your data!

- AUTH END STRENGTH = This is the number of personnel that are actually authorized by the Table of Organization (T/O) for the LMC that the record is being created for. The source document from which this figure can be obtained is the current LMC SAG Employee Listing. This is a numeric entry and is formatted the same way as the ACTUAL END STRENGTH (i.e., 45). Enter some data!

- RECRUITS (+ PROJ) QTR 1-4 = These four entries record, by quarter, all known additional projected labor dollar obligations caused by hiring new employees (either replacements or new billets). This is a numeric entry and will accept any dollar amount from $0.00 to $999,999.99. The $ sign

and . need not be entered as LABORMON will automatically insert them. If the decimal point, for cents, is not entered, LABORMON will assume ".00" and include that as part of the entry (i.e., 4396 or 4396.87). Try it!

- SEPARATIONS (- PROJ) QTR 1-4 = These four entries record, by quarter, all known reductions that can be projected in labor dollar obligations (employee resignation, vacant billets, reduction in force, etc.). The format for this entry is the same as RECRUITS (+ PROJ), with the exception that these are negative dollar amounts and the user must enter data preceded by a "-" sign. Negative amounts will be indicated by LABORMON in parenthesis (i.e., -4379 or -3452.54). Try it again!

- OTHER (+/- PROJ) QTR 1-4 = These four entries record, by quarter, all other projected labor dollar obligations that are known or identified such as uniform allowances, incentive awards pay, overtime, etc. The format of this entry is the same as RECRUITS (+ PROJ) and SEPARATIONS (- PROJ). The user must keep in mind whether the entry is a positive or a negative projection and enter it accordingly (i.e., -4396 or -4396.87 or 6834 or 6834.23). Enter it! Your doing fine!

- ACTUAL ALLOCATIONS QTR 1-4 = These four entries record, by quarter, the actual dollar amount authorized for the newly created LMC record. The source for this figure is the allocation provided by the NPS Comptroller. This is a numeric entry and will accept any whole dollar amount from $0 to $99,999,999. The "$" sign and "," need not be entered as LABORMON will automatically insert them. Additionally, these entries must be entered in whole dollar amounts. If the user attempts to enter a decimal point for cents, LABORMON will round the input to the nearest whole dollar amount (i.e., 3446). Now do it! Hang in there, only one more to go!

- ACTUAL OBLIGATIONS QTR 1-4 = These four entries record, by quarter, the actual labor dollar obligations incurred by the LMC. The user should record all known obligations to ensure accuracy. A source for these figures is the Uniform Management Report (UMR). The format for these entries is the same as the ACTUAL ALLOCATIONS (i.e., 3446). Enter! Now you're an expert!

***** CAUTION *****

Before continuing, ensure all entries are verified to be correct. Remember:

GIGO (Garbage-In, Garbage-Out).

3. Once all known data has been entered on the data entry form, press return.

***** NOTE *****

This is the only time we press return during the data entry evolution.

This will transpose all data from the form to the LABORMON data base.

4. When the data has been transposed, LABORMON will return to the menu mode and prompt the user to select either CONTINUE or STOP. If it is necessary to create more records, select CONTINUE and the above procedure will be repeated (beginning at item 2). If it is not necessary to create additional records, select STOP and continue.

5. LABORMON will remain in the menu mode and prompt the user to select either UPDATE or DISCARD. If it is desired to save the newly created

records so they may be used in the future, select UPDATE and LABORMON will save itself to include the new records. If it is not desired to save the newly created records, select DISCARD and LABORMON will restore itself to the condition it was in prior to the creation of the new records.

6. After LABORMON completes the above selected tasks it will return to the master menu (see unit #2).

## UNIT 5: MASTER MENU SELECTION = = > UPDATE

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select UPDATE and describe the process that will be performed by doing so
- Update a local management code record and save or delete those updated records in the LABORMON data base
- Create a new local management code record and save or delete those newly created records in the LABORMON System data base

**Description = = >**

A description of the UPDATE process follows. Remember, don't press any keys until you finish reading this paragraph and begin paragraph B below. To select UPDATE, follow the procedures outlined in selection of Master Menu Options (unit #2). The system will prompt the user for information that is contained in the data base on each local management code. This information will be used as criteria to select the appropriate record which is to be updated. Any criteria can be used and the system will search the LABORMON data base for all matching records. Once LABORMON has found the record(s) to be updated, the user may move from cell to cell within that record, making the necessary corrections/ updates. This is accomplished by using the cursor movement keys to place the cursor in the record cell to be corrected/ updated, typing the appropriate information, and using the cursor movement keys, vice the return key, to enter the correction/ update. Erroneous corrections/ updates can be corrected by entering the corrected data over the bad data. Once all known corrections/ updates have been entered and verified to be correct, the user must press return to continue the LABORMON process. It should be noted that LABORMON

will not continue unless return is pressed a total of three times during this update process (preferably upon completion of all corrections/ updates). This is a programmed safety feature to prevent LABORMON from exiting the UPDATE process before the user is ready when return is accidently pressed (three strikes and you're out!). When the LABORMON process continues, the user will be prompted to either CONTINUE (update another record) or STOP (stop update process). If the user chooses to CONTINUE, the update process is repeated, requesting new selection criteria. If the user chooses to STOP, LABORMON will prompt the user with another menu to either UPDATE (save newly updated record(s)) or DISCARD (do not save the newly updated record(s)). If the user chooses to UPDATE, LABORMON will save the updated record(s) and return to the master menu. If the user chooses to DISCARD, LABORMON will restore itself to exclude any corrections/ updates, and return to the master menu. Now for some practice.

**Procedure/Commands = = >**

1. Select UPDATE on master menu.
2. When the criterion range appears on the screen with the blinking cursor, use the cursor movement keys to position the cursor in the cell which will contain the criteria used in the selection of the record(s) to be corrected or updated (i.e., AG, SAG, or LMC). Type in the selection criteria (e.g., with the cursor under the AG cell, type M8; with the cursor under the SAG cell, type FG; and or with the cursor under the LMC cell, type B1B1; etc.). Use the cursor movement keys to enter as much criterion data as desired. LABORMON will try to find any or all records that match the entered criteria exactly.
3. LABORMON will not begin searching for the requested record(s) until the user presses return a total of three times. Pressing return less than three times, especially while entering the selection criteria, will not begin the search. This will allow the user to accidently press return twice and maintain program control. Therefore, to initiate the search for the record(s) to be updated, press return a total of three times.
4. If LABORMON does not find any records matching the selection criteria, the update process will return to the status of item 2, above. If this occurs, the criterion range will be displayed with all entered criteria, the computer will beep, and await for changes. If the user does not desire to repeat the procedure, then press return three times to escape the process and continue with the instructions listed in item 8 below. If LABORMON does find the record(s) matching the selection criteria, the update process continues as follows below.
5. LABORMON will position the cursor at the beginning of the first record matching the selection criteria. Using the right and/or left cursor movement keys, position the cursor in the cell requiring correction or update. Enter the correction/ update by typing the appropriate data and pressing the right or left cursor movement keys to place the data into the record.
6. To find other records matching the selection criteria, use the up and or down cursor movement keys. LABORMON will position the cursor at the beginning of the next record matching the selection criteria. Repeat procedure 5 above on each subsequent record matching the selection criteria.

*** CAUTION ***
Before continuing, ensure all entries are verified to be correct. Remember: GIGO (Garbage-In, Garbage-Out).

7. After all updates/ corrections have been made on the selected record(s), press return a total of three times. LABORMON will not continue with the update process unless return is pressed a total of three times. Again, this will return control to LABORMON.

8. LABORMON will return to the menu mode and prompt the user to select either CONTINUE or STOP. If it is necessary to update more records, select CONTINUE and the above procedure will repeat (beginning with item 2). If it is not necessary to update additional records, select STOP and continue below.

9. LABORMON will remain in the menu mode and prompt the user to select either UPDATE or DISCARD. If it is desired to save all the corrections/ updates so they may be used in the future, select UPDATE and LABORMON will save itself to include all corrected/ updated records. If it is not desired to save all corrections/ updates, select DISCARD and LABORMON will restore itself to the condition it was in prior to selection of the whole UPDATE process.

10. After LABORMON completes the above selected tasks, it will return to the master menu (see unit #2).

## UNIT 6: MASTER MENU SELECTION = = > VIEW

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select VIEW and describe the process that will be performed by doing so
- Enter the information required to create a Labor Budget Status Report (individual or consolidated)
- Output Labor Budget Status Report to printer for hard copy on paper
- Output Labor Budget Status Report to terminal screen for display
- Perform "what-if" analysis on Labor Budget Status Report by entering modifications on terminal screen
- Update year-to-date hours for each individual LMC for which a Labor Budget Status Report is created (per pay period)
- Enter information required to create and print a Labor Funding Status Report
- Exit VIEW process and return to master menu

Description = = >

A description of the VIEW process is presented here. Don't press any keys yet! To select VIEW, follow the procedures outlined in selection of Master Menu Options (unit #2). The VIEW process will prompt the user with menus and data entry forms to obtain the appropriate instructions and information necessary to construct and output two types of reports. The first of these reports is called the Labor Budget Status Report and the second is called the Labor Funding Status Report (also described as the Enclosure Report).

When VIEW is selected from the master menu, LABORMON automatically begins the process of constructing the Labor Budget Status Report. First the user is prompted for the selection criteria which is used to extract appropriate information from the LABORMON data base. The selection criteria will determine which LMC record(s) will be included in the report. This portion of the process is similar to the selection process involved for the UPDATE process. Next, the user is prompted to indicate whether the Labor Budget Status Report in creation is an individual LMC report or a consolidation report of more than one LMC/ SAG/ AG. Thirdly, the user is prompted to enter some report data via a data entry form. The report data entered must be verified to be correct. LABORMON will then take control and build the appropriate Labor Budget Status Report. There will be a slight delay as LABORMON constructs the report.

After LABORMON has finished building the Labor Budget Status Report, the system will return to the menu mode and prompt the user for instructions. If the user selects PRINT, LABORMON sends the Labor Budget Status Report to the printer for a hard copy. If the user selects DISPLAY, LABORMON sends the Labor Budget Status Report to the terminal screen for display, allowing the user to make modifications for a type of "what-if" analysis. If the user selects YTD/HOURS, LABORMON updates the individual LMC record, used to build the Labor Budget Status Report, by adding the number of hours worked during the pay period to the cumulative total of hours worked. This provides the user with the flexibility of deciding when to run a report and if current hours should be added to the cumulative total.

The second report is called the Labor Funding Status Report. If the user wants to create this report, a selection of ENCLOSURE must be made. Making this selection causes LABORMON to use the same report criteria that provided the data

for the Labor Budget Status Report. LABORMON automatically collects the appropriate data and constructs and prints the Labor Funding Status Report.

When the user is finished with the VIEW process or desires to create another report, a selection of QUIT-EXIT must be made. This causes LABORMON to return to the master menu and await further instructions. Now you may try it!

**Procedure/Commands = = >**

*Create Labor Budget Status Report*

1. Select VIEW on master menu.
2. When the criterion range appears on the screen with the blinking cursor, use the cursor movement keys to position the cursor in the cell which will contain the criterion used in the selection of the record(s) to be reported on (e.g., AG, SAG, or LMC). Type in the selection criteria (e.g., with the cursor under the AG cell, type M8; with the cursor under the SAG cell, type FG; and or with the cursor under the LMC cell, type B1B1; etc.). Use the cursor movement keys to enter as much criterion data as desired. LABORMON will try to find any or all records that match the entered criteria to extract data for the report.
3. LABORMON will not begin searching for the requested records until the user presses return a total of three times. Pressing return less than three times will not begin the search. This will allow the user to accidently press return twice and still maintain program control. Therefore, to initiate the search for the record(s) to provide the extracted data, press return a total of three times.
4. If LABORMON does not find any records matching the selection criteria, a blank Labor Budget Status Report will be produced. Therefore, care should be taken in selecting the extraction criteria to avoid wasted LABORMON efforts.
5. After the report data has been extracted from the LABORMON data base, the program will return to the menu mode and prompt the user to select INDIVIDUAL (Single LMC Labor Budget Status Report) or CONSOLIDATION (Roll-up Report of more than one LMC Labor Budget Status Report). If LABORMON was provided selection criteria which extracted only one LMC record from the data base, then the user is producing a report on a single LMC. INDIVIDUAL should be selected. Otherwise, if LABORMON was provided selection criteria which extracted more than one LMC record from the data base, than the user is producing a roll-up report on several LMC's. CONSOLIDATION should be selected.

> ***** NOTE *****
> If more than one LMC record was extracted from the data base and the user selects INDIVIDUAL from this menu, the report produced will only contain data from the first LMC record found that matched the selection criteria. However, if the user selects CONSOLIDATION and only one LMC record was found, the report will still be accurate.

6. When the data entry form appears on the screen, the cursor will highlight the requested data. To move the keys from item to item within the data entry form, use the cursor movement keys. To enter data, move the cursor highlight to the pertinent highlighted area and type the input data. This typed input data will appear in the control panel until a cursor movement key is pressed, which will place the data on the data entry form. The following is a description of each item and the format which data must be entered:

*** NOTE ***
Ensure all entries are verified to be correct. Remember: GIGO (Garbage-In, Garbage-Out).

a. PAY PERIOD ENDING DATE = This is the last day of the pay period for which the Labor Budget Status Report is being prepared. Because the date is utilized in several calculations within the report, it must be entered in a specific format. This format is "@DATE(YY,MM,DD)" (e.g., @DATE(86,11,08)).

b. NUMBER OF DAYS PAST = This is the number of compensatory days past in the current fiscal year. This entry is a three character numeric field. The user can obtain this figure from the fiscal time table and should keep in mind to count only Mondays through Fridays (e.g., 10 compensatory days usually equals 1 pay period).

c. DAYS LEFT IN QTR 1-4 = This is the number of compensatory days remaining in the current fiscal year entered by quarter. This entry is a two character numeric field. The user can obtain this figure from the fiscal time table and should again keep in mind to count only Mondays through Fridays (e.g., 1 quarter usually equals either 64, 65, or 66 compensatory days).

d. REMAINING PAY PERIODS = This is the number of pay periods remaining in the current fiscal year. This is a two character numeric field. The user can obtain this figure from the fiscal year time table and should keep in mind there are usually 26 pay periods per fiscal year.

*** CAUTION ***
Before continuing, ensure all entries are verified to be correct. Remember: GIGO (Garbage-In, Garbage-Out).

7. Once all data has been entered on the data entry form, press return to transpose the data and allow LABORMON to continue the VIEW process. At this point, the user will notice a slight delay while LABORMON is constructing the report. However, when LABORMON is finished with the Labor Budget Status Report, the system will return to the menu mode, at which point, the user will provide further instructions through the appropriate menu selection.

*Print Labor Budget Status Report*

1. After selecting VIEW from the master menu and allowing LABORMON to construct the Labor Budget Status Report (procedures 1-7 above), select

*** NOTE ***
Ensure the printer is turned on with the paper properly loaded at "top of form" and the on-line indicator is on prior to selecting PRINT. LABORMON will abort process if the printer is found not ready. See vendor instructions for proper printer set-up.

PRINT from the inner menu.

2. LABORMON will print the constructed Labor Budget Status Report and return to the menu mode with the same menu upon completion.

*Display Labor Budget Status Report*

1. After selecting VIEW from the master menu and allowing LABORMON to construct the Labor Budget Status Report (procedures 1-7 above), select DISPLAY from the inner menu.

2. Use the cursor movement keys to move around the displayed report. The report will be displayed in sections as allowed by the size of the screen. Use right, left, up, and or down cursor movement keys to position the report for

> ***** CAUTION *****
> Do not move the cursor outside of the Labor Budget Status Report boundaries. Severe damage to the LABORMON System or data may result. Care must also be taken not to enter erroneous data onto the report. This will cause severe damage to the LABORMON System and data.

viewing.

3. To return control to the LABORMON System, press return three times. Labormon will not regain control of program by pressing return once or twice. This will allow the user to accidently press return twice and maintain control. Therefore, after looking at the display and to continue the VIEW process, press return a total of three times. LABORMON will return to the menu mode with the inner menu.

*Perform "What-if" Analysis on the Labor Budget Status Report*

1. Complete procedure/ commands 1 and 2 for Display Labor Budget Status Report above.

2. Use the cursor movement keys to position the cursor in the cell that requires modification. Type the "what-if" data and it will be displayed in the control panel. To enter the typed data onto the Labor Budget Status Report, use the cursor movement keys an move the cursor to another cell. The information will be transposed to the report at the desired location and all calculations resulting

> ***** CAUTION *****
> Entering data in a cell containing a formula for calculations will destroy that formula. Therefore the user should examine the cell contents prior to entering modifications. Changes should be made to cells that provide the source of calculations and not the result of the calculations.

from that data will be performed.

3. Complete procedure/ command 3 for Display Labor Budget Status Report above.

*Update Year-to-Date Hours for Individual LMC*

1. Complete procedure/ commands 1 through 7 of Create Labor Budget Status Report above. Ensure Labor Budget Status Report was created for one LMC record only. The user should also take care so not to update the LMC YTD hours more than is required. This will produce erroneous report data if not performed properly and timely.

2. Select YTD HOURS from the inner menu. LABORMON will add the E&P Hours reflected on the Labor Budget Status Report to the prior year to date hours to reflect a current cumulative total.

3. LABORMON will return to the menu mode with the inner menu.

*Create and Print Labor Funding Status Report*

1. Complete procedure/ commands 1 through 7 of Create Labor Budget Status Report above.
2. Select ENCLOSURE from the inner menu. There will be a brief delay while LABORMON creates and prints the Labor Funding Status Report. The report will be created using the same data extracted for the Labor Budget Status

> ***** NOTE *****
> Ensure the printer is turned on with the paper properly loaded at "top of form" and the on-line indicator is on prior to selecting PRINT. LABORMON will abort process if the printer is found not ready. See vendor instructions for proper printer set-up.

Report.

3. Upon completion, LABORMON will return to the menu mode with the inner menu.

*Quit-Exit VIEW Process*

1. Complete all desired tasks contained in the VIEW process.
2. Select QUIT-EXIT from the inner menu. LABORMON will remain in the menu mode and return to the master menu (see unit #2).

## UNIT 7: MASTER MENU SELECTION = = > PRINT

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select PRINT and describe the process that will be performed by doing so
- Print an existing Labor Budget Status Report

**Description = = >**

A description of the PRINT process follows. To select PRINT, follow the procedures outlined in the Selection of Master Menu Options (unit #2). This process will not prompt the user with any menus or requests for information. It merely prints the Labor Budget Status Report that was last created by LABORMON. The user will

most likely use this to print extra copies of the report if it becomes necessary after exiting the VIEW process. Now try it.

**Procedure/Commands = = >**

> *** NOTE ***
> Ensure the printer is turned on with the paper properly loaded at "top of form" and the on-line indicator is on prior to selecting PRINT. LABORMON will abort process if the printer is found not ready. See vendor instructions for proper printer set-up.

1. Select PRINT on the master menu.
2. LABORMON will print the Labor Budget Status Report and return to the menu mode with the master menu upon completion (see unit #2).

## UNIT 8: MASTER MENU SELECTION = = > DELETE

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select DELETE and describe the process that will be performed by doing so
- Delete a local management code record(s) from the LABORMON data base

**Description = = >**

A description of the DELETE process is presented below. To select DELETE, follow the procedures outlined in the Selection of Master Menu Options (unit #2). The DELETE process will select candidate records for deletion from the data base depending upon selection criteria entered by the user. Prior to actual deletion, the user will be prompted to ensure that the records are to be deleted. Once LABORMON is granted approval, the deletion is performed and the deleted records cannot be restored (unless manually re-created). If the user decides to cancel the deletion prior to it's execution, then the records remain untouched in the LABORMON data base. Try it, but be careful!

**Procedure/Commands = = >**

1. Select DELETE on the master menu.

2. When the criterion range appears on the screen with the blinking cursor, use the cursor movement keys to position the cursor in the cell which contain the criteria used in selection of the record(s) to be deleted (e.g., AG, SAG, or LMC). Type in the selection criteria (e.g., with the cursor under the AG cell, type M8; with the cursor under the SAG cell, type FG; and/or with the cursor under the LMC cell, type B1B1; etc). Use the cursor movement keys to enter as much criterion data as desired. LABORMON will try to find any and/or all

> ***** CAUTION *****
> The user should enter as much known criteria as possible to avoid erroneous deletion of vital records. Once LABORMON performs the deletion, there is no restoring of the data. The only way records can be restored is to go through the CREATE process to re-create them and then use the UPDATE process to ensure the data is restored to the correct state.

   records that match the entered criteria for deletion.

3. LABORMON will not begin the deletion process until the user presses return a total of three times. Pressing return less than three times will not begin the deletion process. This will allow the user to accidently press return twice and still maintain program control. Therefore, to initiate the search for the records to be deleted, press return a total of three times.

4. After LABORMON finds the records to be deleted, the user will be prompted to either CANCEL the deletion process or DELETE the selected records. If the user decides to cancel the deletion process, use the cursor movement keys to position the cursor over the menu item CANCEL, and press return. If the user wants LABORMON to continue with the deletion process, use the cursor movement keys to position the cursor over the DELETE menu item and press return.

5. Upon completion of the requested tasks, LABORMON will remain in the menu mode and return to the master menu (see unit 2).

## UNIT 9: MASTER MENU SELECTION = = > QUIT

**Objective = = >**

With the LABORMON System in the menu mode, and the master menu displayed on the control panel, the participant shall be able to:

- Select QUIT and describe the process that will be performed by doing so
- End the LABORMON session and return computer control to MS-DOS to perform other microcomputer functions

**Description = = >**

A description of the QUIT process follows. To select QUIT, follow the procedures outlined in the Selection of Master Menu Options (unit #2). The QUIT process will not prompt the user for any instructions or entering of data. Once QUIT is selected, the LABORMON session will be terminated along with the LOTUS 1-2-3 software. Computer control will be passed to the operating system, MS-DOS, and the A> prompt will appear on the screen. The only way to re-enter LABORMON is to follow the procedures outlined in unit #1, Entering the LOTUS LABORMON System. Once the A> prompt appears on the screen, the user may resume with other microcomputer applications.

**Procedure/Commands = = >**

1. Select QUIT on the master menu.
2. Wait for the A> prompt and resume with other microcomputer applications.

# APPENDIX G
# SOFTWARE DOCUMENTATION

Software documentation in this appendix includes the following figures.

- LABORMON LOTUS 1-2-3 Database File Format (Table 1)
- LABORMON Lotus Macro Program Listing (Figure G.1)
- LABORMON System Flowchart (Figure G.2)

TABLE 1

LABORMON LOTUS 1-2-3 DATABASE FILE FORMAT

| FIELD NAME | FIELD SIZE | FIELD TYPE | REMARKS |
|---|---|---|---|
| AG | 2 | Alphanumeric | Char Format |
| SAG | 2 | Alphanumeric | Char Format |
| LMC | 4 | Alphanumeric | Char Format |
| E&P PAYMENT | 11 | Numeric | $ Format w/ 2 decimal places and commas |
| E&P Hours | 12 | Numeric | # Format w/ 1 decimal place and commas |
| Actual E/S | 11 | Numeric | # Format w/ commas and 0 decimal places |
| Auth E/S | 11 | Numeric | # Format w/ commas and 0 decimal places |
| Recruits (+ Proj) (Quarters 1-4) | 11 | Numeric | $ Format w/ 2 decimal places and commas |
| Separations (+ Proj) (Quarters 1-4) | 11 | Numeric | $ Format w/ 2 decimal places and commas |
| Other (+/- Proj) (Quarters 1-4) | 11 | Numeric | $ Format w/ 2 decimal places and commas |
| Actual Allocations (Quarters 1-4) | 11 | Numeric | $ Format w/ commas and 0 decimal places |
| Actual Obligations (Quarters 1-4) | 11 | Numeric | $ Format w/ commas and 0 decimal places |
| YTD Hours | 12 | Numeric | # Format w/ 1 decimal place and commas |

Figure G.1 LABORMON Lotus Macro Program Listing

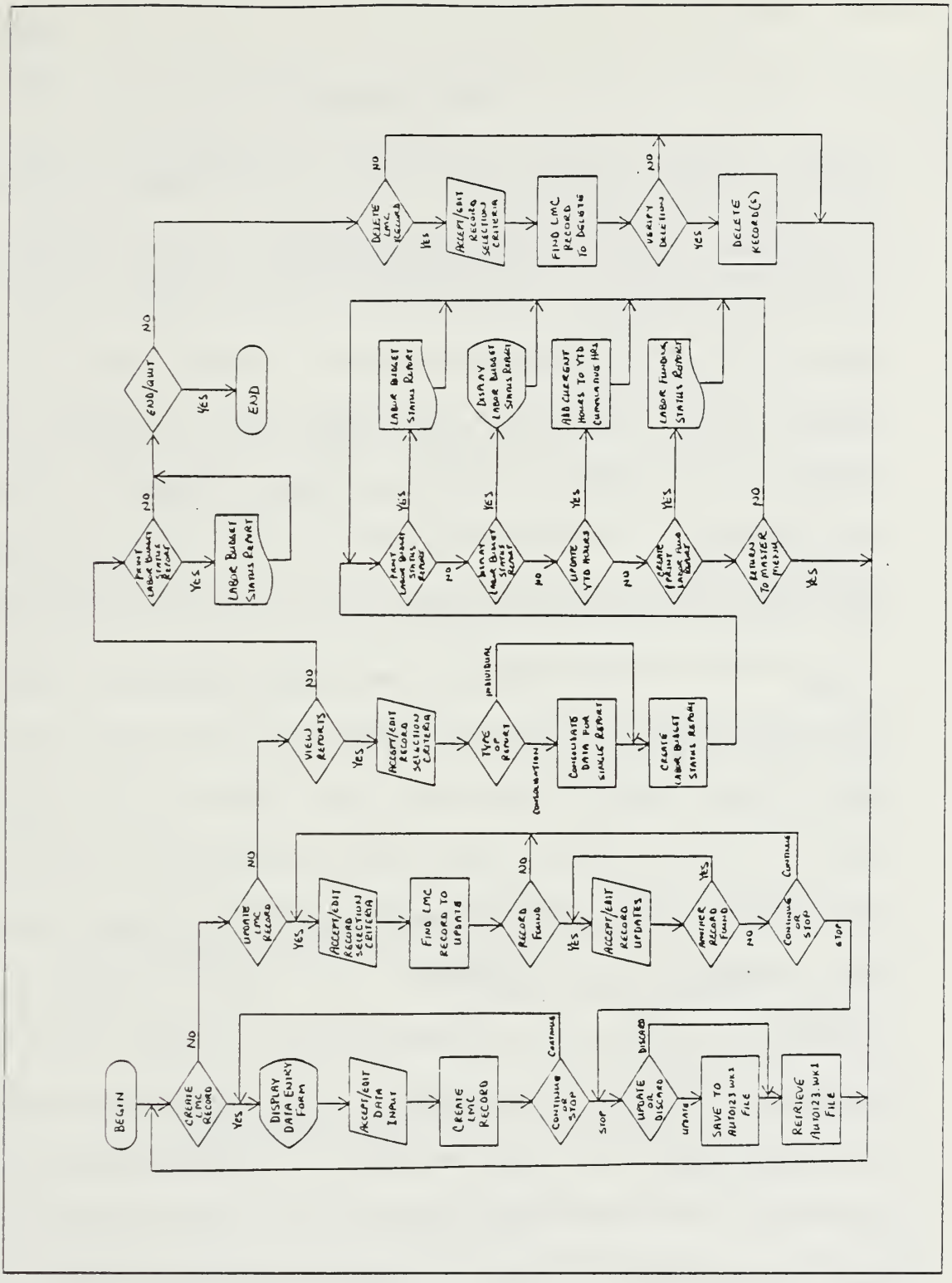



Figure G.2 LABORMON System Flowchart

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